

2015

## SLIS Connecting, Volume 4, Issue 1

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*University of Southern Mississippi*

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THE UNIVERSITY OF  
**SOUTHERN**  
**MISSISSIPPI.**

School of Library & Information Science

# SLIS Connecting

People, Technology, Libraries, History & Learning





**SLIS Update**  
**Elizabeth Haynes, Director**

Welcome to this issue of *SLIS Connecting*. We are pleased to be able to continue publishing this e-journal to showcase our news and scholarly papers of interest.

Our faculty members continue to accomplish great things and I'd like to highlight a few of them.

- Dr. Catharine Bomhold was promoted to Associate Professor and is working toward establishing a community literacy council in collaboration with the Hattiesburg Public Schools.
- Dr. Stacy Creel has had a peer-reviewed article accepted on the effects of assigned reading on pleasure reading with young adults. She has also received the Carnegie-Whitney grant from ALA.
- Dr. Griffis has done several presentations and received the prestigious ALISE Research Grant, which he is using to study roving reference practices in libraries.
- Dr. Xinyu (Cindy) Yu gave a presentation to the Southern Chapter of the Medical Library Association. She also serves on the University IRB Committee.
- Dr. Matthew Griffis and Dr. Teresa Welsh are have another large British Studies class during July. As of July 1<sup>st</sup>, Dr. Welsh assumed duties as the Director of SLIS.
- Dr. J. Norton and Dr. Cindy Yu participated in the spring semester as fellows in the Quality Enhancement Program here at Southern Miss.

Attendance for the 2015 Fay B. Kaigler Children's Book Festival was up from last year and we had an outstanding line-up of speakers and break-out sessions. Next year's Festival promises to be just as good or better.

The College of Education and Psychology Awards ceremony was held this past spring. We were very pleased to honor Carlos Crockett with the Warren Tracy Award for Outstanding MLIS Graduate, Jordan Pettigrew with the Anna Roberts Award for the Outstanding BA Graduate, and Kelly Kitzman and LaQuana Burks with the H.W. Wilson Scholarship Award.

We continue to solicit donations for a new endowed graduate scholarship. Unlike most of our other scholarships, this scholarship is open to any graduate student meeting the qualifications, regardless of place of residence. If you are an alum, employer, or friend of USM SLIS, then we encourage you to consider donating to this scholarship, which is administered through the USM foundation.\*

Pledges can be paid out over five years on a monthly basis through bank draft or credit card charge. For example, a pledge of \$1000 costs only \$17 per month if paid out over five years. Please think about making this tax-deductible gift to the School. We'll be happy to send you a donation form or put you in touch with the USM Foundation.

June 30<sup>th</sup> was my last day as Director of SLIS. I am retiring after a 47-year career, 17 of which were spent at Southern Miss. Working at SLIS has been an incredible experience and I treasure every moment of it. I'm looking forward to living in Arizona but I will greatly miss the University of Southern Mississippi and SLIS faculty and students.

Enjoy this issue of *SLIS Connecting*.



Dr. Elizabeth Haynes received her MLS and Ph.D. degrees from the University of Texas at Austin. She has been a school library media specialist and district library administrator for El Paso (Texas) Public Schools and a library media specialist for the Texas Education Agency.

She joined the faculty of the School of Library and Information Science at the University of Southern Mississippi in Hattiesburg in 1998.

\*If you would like to contribute to the Dr. Elizabeth Haynes Scholarship fund #2199, go to:

<http://www.usmfoundation.com/>

## Celebrate the 50<sup>th</sup> Anniversary of the SLIS Graduate Program

By Dr. Matthew Griffis

(reprinted with permission from the Spring 2015 issue of *LISSA Links*)

[https://www.usm.edu/sites/default/files/groups/school-library-and-information-science/pdf/lissa\\_spring\\_2015\\_newsletter.pdf](https://www.usm.edu/sites/default/files/groups/school-library-and-information-science/pdf/lissa_spring_2015_newsletter.pdf)

This fall will mark the 50<sup>th</sup> anniversary of the graduate program in library science at the University of Southern Mississippi. SLIS will be commemorating the occasion with a number of events, bringing together past and present faculty as well as alumni. The event will be of interest to countless library and archives professionals across the southeastern United States since The University of Southern Mississippi's library science program is the only fully ALA-accredited program in the state, and one of just a few nationally-recognized library programs in The South.

Library training dates back to ancient times. Ever since the Hellenistic period, with the organization and construction of the Library of Alexandria, caretakers of libraries have been expected to possess special skills and competencies, among them a high degree of literacy and scholarly knowledge as well as administrative and organizational abilities. Although some of the earliest modern examples date back to 1820s France, librarian training courses did not emerge in the West until the late 19<sup>th</sup> century, about ten years after the American Library Association formed in 1876, when Melvil Dewey initiated library science classes at Columbia College in the mid-1880s. Similar library education programs emerged in Canada, Germany, China, and England. The University of Chicago's Graduate Library School, founded in 1928, marked the first graduate program in library science offered in North America.

Library training courses were first offered at Southern Miss as far back as 1926, when the school was known as the Mississippi State Teacher's College. In the late 1950s, after the school been renamed Mississippi Southern College, the library science program became part of the College of Education and Psychology. The first master's program in library science at Southern Miss was introduced in 1965, and

became fully accredited by ALA in 1978-79. The department was officially named the School of Library and Information Science (SLIS) in 1993.

Today SLIS is in the College of Education and Psychology and offers a Bachelor of Science in LIS; an MLIS; a supplemental school library media specialist endorsement; a graduate certificate in archives and special collections; a graduate certificate in youth services and literature; and dual master's degree programs in history, anthropology, and political science. SLIS offered its first hybrid library training courses the mid-90s and, several years later, offered one of the first online MLIS programs. This is now a fully online MLIS program, and is one of only a few offered in the United States.

SLIS will be commemorating the occasion with a number of events, including a special presentation at the fall meeting of the Mississippi Library Association. SLIS is also planning a special commemorative issue of *SLIS Connecting*, the department's indexed journal. An article about the history of the department will be submitted to *Mississippi Libraries*. The department is also preparing a Web page that will include an illustrated timeline.

LISSA and the Southern Miss Student Archivists' Association (SMSA) will also be preparing an on-campus display commemorating the event. The display will include items relating to the history of the university's library and information science courses, the campus libraries, and the history of modern librarianship in general. The display will include many pieces from Dr. Griffis' personal collection of artifacts relating to library history; among his rarest pieces are copies of manuals and textbooks from some of the first American library schools, ca. 1880s-90s.

You are invited to contribute suggestions and ideas for other events. Please contact Dr. Griffis ([matthew.griffis@usm.edu](mailto:matthew.griffis@usm.edu)) or Dr. Welsh ([teresa.welsh@usm.edu](mailto:teresa.welsh@usm.edu)) for details.



online 40 graduate credit hour program does not require physical residence in Mississippi, but each course does have required real-time virtual meetings. Currently students enrolled in Southern Mississippi online programs pay in-state tuition.

For undergraduate students, SLIS offers the bachelor's degree in library and information science (B.A.), which can be used to obtain a variety of paraprofessional positions in libraries and other information environments. The B.A. in library and information science may be used to become certified as a school library media specialist. If you hold a teaching credential you may complete our 21 credit hour supplemental endorsement to be 'highly qualified' as a certified school library media specialist. The 21 credit hour supplemental endorsement is available entirely online, with real-time required chat meetings. The bachelor's degree in library and information science can be obtained entirely online through Southern Miss and the Mississippi Virtual Community College network.

For more information about SLIS, please visit our webpage at [www.usm.edu/slis](http://www.usm.edu/slis) or contact us at If you are interested in either program email [slis@usm.edu](mailto:slis@usm.edu), or call 601-266-4228.



Library science classes at Southern Miss, ca. mid-1980s.

*Credit: The University of Southern Mississippi. (Note: If you can identify any of the students or instructors in these images, please contact Drs. Griffis or Welsh.)*

### More About SLIS

The mission of the master's of library and information science program is to prepare qualified individuals for professional roles in libraries and other information environments with appropriate knowledge and skills to serve the information needs of their communities.

SLIS is an American Library Association accredited Master of Library Science program. The completely

**THE UNIVERSITY OF SOUTHERN MISSISSIPPI**

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**Additional Resources**  
 Graduate Certificate in Archives and Special Collections  
 Graduate Certificate in Youth Services and Literature  
 School Library Media Specialist Endorsement  
 Disaster Preparedness

**Fay B. Kaigler Children's Book Festival**  
 British Studies  
 Study abroad with LIS! Students



### Faculty Spotlight

Born in California and raised in the suburbs of Chicago, Dr. Catharine Bomhold has spent the majority of her adult life in the Deep South. She is a graduate of Illinois State University (BA, art history), The University of Illinois at Urbana-Champaign (MA, art history; MLS), and the University of Alabama (Ph.D.).

After graduating from UIUC in 1993, Dr. Bomhold was given her first professional library position as Director of the Clarence B. Hanson Library at the Birmingham Museum of Art and relocated to Alabama. When she had her first child, Dr. Bomhold started reading her childhood favorites to him, an experience that fundamentally changed her academic life—both pictured below. She eventually changed her doctoral studies from history of the book to children's literature and emergent literacy and has continued with that specialty for over 15 years.



Dr. Bomhold has been on the faculty of USM SLIS since 2003 and has taught a variety of classes over the years. She was Director of the Fay B. Kaigler Children's Book Festival from 2005-2010 and is active in the American Library Association. She served on the Sibert and Batchelder awards committees and is currently the ALA Councilor for the Ethnic and Multicultural Information Exchange Round Table. Dr. Bomhold is the co-author of two reference books for children's librarians; *Twice Upon a Time* (2008) and *Make It, Do It, Play It* (2014), both published by Libraries Unlimited. Her current research interests are in smart phone use in academic libraries and teaching early literacy skills to parents of young children. Most recently, Dr. Bomhold has formed the Council on Community Literacy and Reading, a

multidisciplinary association between in the College of Education and Psychology and the Hattiesburg community. The mission of the Council is to create and promote reading opportunities for people of all ages and abilities in the area.

While living in Illinois, Dr. Bomhold met and married Rex, who has faithfully followed her throughout her career moves. Rex also works for USM as a statistical analyst. The couple now have three children; Austin (20), Max (14), and Zoe (9), and a house full of pets. While all of the Bomholds are avid readers, Dr. Bomhold is the only one who still happily reads picture books every day.

### Alumni Spotlight

Ashley McLendon Mattingly currently works for the National Archives at St. Louis (NARA) in her dream role as an Archivist. As a civil servant, Ashley promotes the access of thousands of personnel files. These files not only contain the career information of individuals who served as federal employees from the late 19<sup>th</sup> century to 1952, but also include clues to researchers and family members about the fascinating every-day people of the past. Every file is as individualistic as the people they document.

Ashley would not have been able to serve the public in this capacity without her education from the University of Southern Mississippi. After obtaining her undergraduate degree in history from Washington College in Maryland, she worked in various capacities for a variety of museums. After discovering that her passions lie within the realm of collection management and archival work, she decided to pursue her MLIS from the University of Southern Mississippi. Ashley moved from Maryland to Hattiesburg and served as a graduate assistant while obtaining her MLIS with a concentration in archival administration.

Having previously worked with the District of Columbia's architectural drawings at the Historical Society of D.C. and under the tutelage of her Smithsonian-trained mentor at Sotterley Plantation, a historic house museum, Ashley was well equipped for an internship at a museum close to Hattiesburg: the Mississippi Armed Forces Museum. Ashley combined her education from USM with her past skills to create a collections management guide, which allowed her

to obtain a position as the museum's Archivist following the receipt of her MLIS in December 2005.



Now Ashley works with a collection of approximately 300,000 cubic feet of civilian personnel files at NARA. While serving as an Archivist for such a unique collection of documents, Ashley has also planned and managed the relocation of these records and has performed rehousing. She has also been involved with outreach to the local community, through NARA's Virtual Genealogy Fair, to other NARA regional facilities, at the National Genealogical Society's annual conference, and via articles and blog posts.

Ashley is a Certified Archivist through The Academy of Certified Archivists and a member of the Midwest Archives Conference and the Association of St. Louis Area Archivists. Ashley also serves as the secretary for Friends of LeClaire, which promotes the history of her neighborhood.

### Course Spotlight – The Youth Services Certificate

The Graduate Certificate in Youth Services and Literature came into being in Spring 2013 and is a 15-credit hour certificate—nine hours are required and six hours are electives. The goal of the certificate is to prepare students for educational or library careers related to children and young adult literature, programs, and services. Students will use this certificate for career development, advancement, and diversification. The certificate can be earned with the MLIS or post-MLIS; 12 of the 15 credit hours can be used for the MLIS and the certificate—meaning this certificate can be earned with just one additional course! This certificate also gives students the

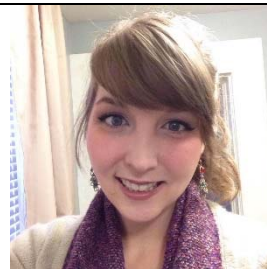
opportunity to experience graduate level courses from Curriculum and Instruction and Child and Family Studies.

### Required

- LIS 517 – Literature & Related Media for Children
- LIS 518 – Literature & Related Media for Young Adults
- LIS 519 – Programs & Services for Youth

### Electives (choose two; one must be 600-level or higher):

- LIS 528 – Storytelling
- LIS 590 – Library Instruction
- LIS 629 – Studies in Children's Literature
- LIS 634 – History of Children's Literature
- LIS 670 – Topics in Services to Library Clientele
- FAM 650 – Family Life Cycle Development
- FAM 652 – Advanced Child Development
- CIE 768 – Children's Literature for the Early Years



*"This certificate has been extremely helpful in interviewing and advancing my career."*

Lindsey Miller Beck graduated with the YSL Certificate in 2013. She served as the Youth Services Coordinator at Columbus-Lowndes Public Library and will be starting as a school librarian in August 2015.

*"These classes were really enjoyable and taught me a lot about instruction, engagement, and thinking outside of the box. As MC's Medical Science department librarian keeping instruction exciting at a graduate level can be a challenge too!"*



Michelle Finerty graduated with her YSL Certificate in 2013; she is the Reference & Instruction Librarian for School of Science and Mathematics at Mississippi College.

### From the Grad Assistants:

SLIS GAs: Mary Katherine Dugan, Amanda King, Myra Miller, Colleen Smith, Jessica Whipple



Jessica Whipple presented at USM Grad Symposium



Colleen Smith won the Kate Greene Award for outstanding gender-related grad student paper, "The Venacular Discourse of Southern Sisterhood" by the USM Committee on Services & Resources for Women (CSRW) chaired by Dr. Stacy Creel.



Mary Katherine Dugan participated in the USM Graduate School's Three-Minute Thesis competition in Nov. 2014. A dual Anthropology MA/MLIS major, she presented her thesis-in-progress, "A Comparison of Object Permanence in Lemurs and Bushbabies."

### Congratulations SLIS Students

LaTrisha Blunt, recipient of ARL Career Enhancement Fellowship, attended the ARL Annual Leadership Symposium, Jan. 29-Feb. 1, Chicago, IL.

Amanda Lewis is Library Associate, Sulphur Public Library, LA.

Erica McCaleb is Reader's Advisor, Miss. Library Commission, Jackson.

Lynn Valetutti is Electronic Resources Librarian, Univ. of Arkansas, Monticello.

Jessica Whipple won LIS Research Award for "Consumer Health Internet and Technology Use: A Bibliometric Analysis," Grad. Research Symposium.

### Congratulations SLIS Alums

Two SLIS alums earned doctoral degrees, spring 2015. Patti Condon (Anthropology MA/MLIS 2005) awarded Ph.D. in LIS with a focus on Digital Stewardship from Simmons College, Boston. Chameka S. Robinson, Head of Access Services, Univ. of Miss. Medical Center Library, awarded USM Ed.D.

Several SLIS Alums were elected to the 2015 Miss. Library Association (MLA) Executive Board:

Patsy Brewer (MLIS 1990), Director, Waynesboro-Wayne County Library, is MLA President.

Ellen Ruffin (MLIS 1998), Curator, de Grummond Children's Lit Collection, is ALA Councilor.

Melissa Dennis (MLIS 2006), Outreach/Instruction Librarian, Univ. of Mississippi, is SELA Councilor.

James Kennedy (MLS 1996), Admin. Librarian, Hinds Community College, is ACRL Section Chair.

Joy Garretson (MLIS 2014), Continuing Ed Training Coordinator/State Data Coordinator, Miss. Library Commission, is Special Libraries Section Chair.

MLA Committee Chairs:

Legislative: Lynn Shurden (MLS 1994)

Antoinette Giamalva (MLIS 2012)

Web Page: Jennifer Nabzdyk (MLIS 2012)

Jaclyn Lewis Anderson (MLIS 2013), Youth Services Director, Madison County Libraries, MS, is YALSA Maker Contest winner for ArtBot teen workshops.



Kim Belair (MLIS 2010), Supervisory Librarian, Mesa Express Library, AZ, awarded a Library Services & Technology grant for Nabi Big Tablet training.

Justine Burcham (MLIS 2014), ILL Manager/Adult Services Outreach Coordinator, Pulaski County Library System, is a Certified Professional Librarian, The Library of Virginia.

Stephanie Carter (MLIS 2014) is Librarian, Arkansas State Library, Little Rock.

Marsha Case (MLIS 1994) retired as Asst. Director, Tech. Services, Jackson/Hinds County Libraries, MS

Sharon Doshier Davis (MLIS 2005) is Manager, Biloxi Libraries, Miss.

Shardae Foley (MLIS 2013) is TRIAD AmeriCorps Program Specialist, USM Institute for Disability Studies, Hattiesburg.

Tonja Johnson (MLIS 2005) is Asst. Director of Human Resources and Branch Development, Jackson-George Regional Library System, Pascagoula, MS.

Jessica Herr (MLIS 2011) is Asst. Director, Branch Services & HR, Jackson-George Regional Library System, MS.

David Ketchum (MLIS 2008) is Co-Interim Head, Access Services, University of Oregon Libraries.

Kelli Bennett Miller (MLIS 2014) is Asst. Director, Pike-Amite-Walthall Library System, McComb, MS.

Jennifer Nabzdyk (MLIS 2012), Miss. Library Commission Digital Services Consultant, was named a 2015 ALA Emerging Leader.

Edem Nitcher (MLIS 2014) is Computer Lab Manager, Hattiesburg Public Library, MS.

Jody Perkins (MLIS 2005) is Collection Management Director, Mississippi Library Commission, Jackson.

Candace Perilloux (MLIS 2014) is Children's Services Librarian, St. Tammany Parish Library, LA.

Hillary Richardson (MLIS 2011) is Humanities Librarian, Miss. State University Libraries, Starkville.

Julie Dunn Shedd (MLIS 2009) is the Digital Initiative Librarian at Miss. State University Libraries, Starkville.

Cole Smith (MLIS, Archival Certificate, 2014), is Government Services Archivist, Alabama Department of Archives and History, Montgomery, AL.

Mariyam Thohira (MLIS 2004) is Electronic Resources Acquisitions Librarian, Johns Hopkins Univ, Baltimore.

Chris Thornhill (MLIS 2014), Youth Services Librarian, Library of Hattiesburg, Petal & Forrest County, MS, created "Mother Goose on the Loose" Baby Story Time for early literacy (birth to two years).

Ally Watkins (MLIS 2011) is a Mississippi Library Commission Library Consultant, Jackson, MS

Evan Williamson (MLIS 2007) is Reference Supervisor, Terrebonne Parish Library, Houma, LA.

Jamie Bounds Wilson (MLIS 2003) is Electronic Resources & Web Services Librarian, Millsaps College, Jackson, MS.

Callie Wiygul (MLIS, Archival Certificate, 2014) is Reference & Instruction Librarian, School of Social Work, Univ. of Southern California, Los Angeles.

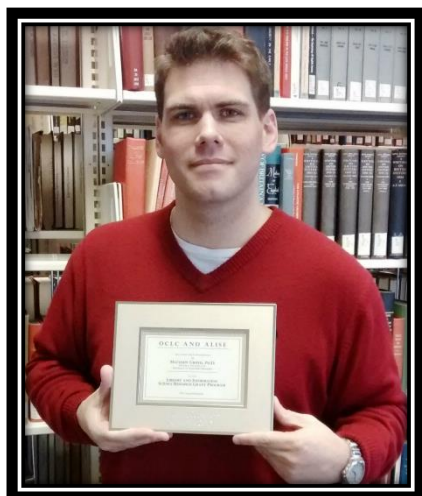
### **Mississippi Library Leadership Institute 2014 Class**

Congratulations to 20 rising LIS stars, many of whom are distinguished SLIS alums.

- Ashley Biggs, Central MS Regional Library System, Flowood
- JoAnn Blue, Carnegie Public Library, Clarksdale & Coahoma County
- Jamie Elston, Jackson-George Regional Library System, Moss Point
- Antoinette Giamalva, Delta State Univ, Cleveland
- Crystal Giles, NW Miss. Community College, Senatobia
- Joshua Haidet, E. MS Regional Library, Quitman
- Shivon R. Hess, MS Library Commission, Jackson
- Lisa Justis, East MS Community College, Mayhew
- Sarah Mangrum, USM, Hattiesburg
- Erica McCaleb, MS Library Commission, Jackson
- Lindsey Miller, Columbus Lowndes Cnty Library
- Darlene Morgan, Pike-Amite Walthall Library System, McComb
- Jennifer Parker, Magee High School, Magee
- Jesse Pool, 1st Regional Library Syst., Horn Lake
- Hillary Richardson, MS State University, Starkville
- Elizabeth Simmons, Puckett Attendance Center

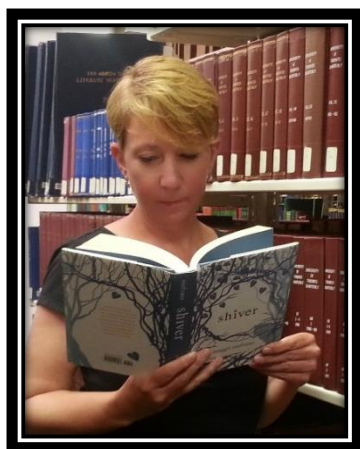
- Violene Williams, Coahoma Community College, Clarksdale
- Jamie Wilson, Millsaps College, Jackson,
- Callie Wiygul, Hattiesburg Public Library
- Abbie Woolridge, Meridian Lauderdale County Public Library

### Congratulations to SLIS Faculty



Dr. Matthew Griffis awarded OCLC/ALISE \$13,600 Research Grant for "The Place of the Librarian in the Deskless Library: Do Roaming Reference Models Create a More User-Centered Library?"

Dr. Stacy Creel is a 2015 ALA Carnegie-Whitney Grant winner for a bibliography project, "The Importance of Play: A Selected Bibliography of Resources Related to Learning through Play."



Dr. Cindy Yu has been accepted into the National Library of Medicine for a Biomedical Informatics course, Sept. 28-Oct. 2, 2015, Brasstown Valley Resort and Spa, Young Harris, Georgia.

### SLIS Faculty, Student, Alum Publications *Journal Articles*

MLIS student Emily Aplin and Dr. Matthew Griffis, "Digi Days: Using the Rey Papers to Teach Digitization to LIS and Archival Students," *The Primary Source* 33(2): 5-11, 2014.

Dr. Catharine Bomhold, "Research and Discovery Functions in Mobile Academic Libraries: Are

University Libraries Serving Mobile Researchers?" *Library Hi Tech* 33(1): 32-40, 2015.

Marilyn M. Brissett (MLIS 2008), "Aspects of Authorship, Coauthorship, and Productivity in School Library Research 1998-2012," *QQML Journal*, Special Issue on Bibliometric Research: 5-16, 2015.

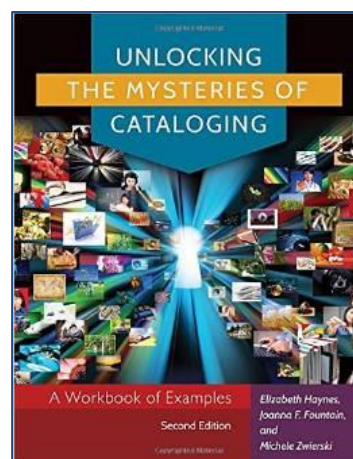
Corinne Kennedy (MLIS 2012), "Bibliometric Study of Scholarly Writing and Publishing Patterns in Regards to Copyright Issues of Visual Art Resources," *Art Documentation* 34(1): 60-70, 2015.

Dr. Matthew Griffis, "Searching for Carnegie: A Visit to the World's Oldest Carnegie Library Calls to Mind an Important Chapter of Mississippi's Library History," *Mississippi Libraries* 78(1), 2015.

Stephen Parks (MLIS 2013), "A Bibliometric Study of LIS Literature Related to Academic Law Librarianship," *QQML Journal*, Special Issue on Bibliometric Research: 29-39, 2015.

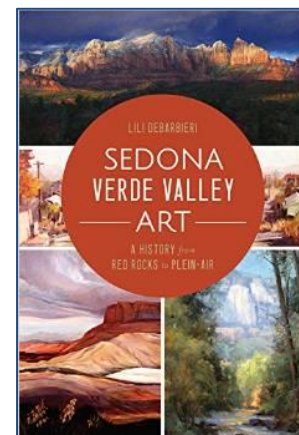
Daniel Wilson (MLIS 2012), Content and Design: An Analysis of Alabama Academic Library Web Site," *The Electronic Library* 33(1): 88-102, 2015.

### Books



*Unlocking the Mysteries of Cataloging: A Workbook of Examples, 2nd ed.*, by Dr. Elizabeth Haynes, Dr. Joanna Fountain, & Michele Zwiarski (Libraries Unlimited, 2015)

*Sedona Verde Valley Art: A History from Red Rocks to Plein-Air* by Lili De Barbieri (MLIS 2013) (Arcadia Publishing, 2015)





### Recent SLIS Faculty, Student, Alum Presentations

Dr. Matthew Griffis, Shane Hand, and Steven Knowlton, "Southern Librarianship and Race in the Early 20<sup>th</sup> Century" at the Tennessee Library Assoc. Annual Conference, Memphis, Apr. 22-24.

Dr. Matthew Griffis, "Let There be Light: Segregated Carnegie Libraries as Spaces for Learning and Community Engagement in Pre-Civil Rights America, 1900-60," Macon, GA, Mar. 13-14.

Dr. Matthew Griffis and Dr. Eric Platt, "Framing the New South: Promoting an Image of Academic Enlightenment via Postcard Depictions of Southern Higher Education in the Late 19<sup>th</sup> and Early 20<sup>th</sup> Centuries," the Southern History of Education Society Annual Meeting, Macon, GA, Mar. 13-14.

Dr. Matthew Griffis and Shane Hand (History Ph.D. Candidate, MLIS/MA History, 2011), "Promoting Archives through Social Media: Strategies that Work," Society of MS Archivists, Long Beach, Apr. 16.

- Dr. Matthew Griffis, "Academic Library Mission Statements, Web Sites, and Communicating Values"
- Dr. Cindy Yu, "Meaningful Engagement: Crowdsourcing and 100 Digital Preservation Objects"

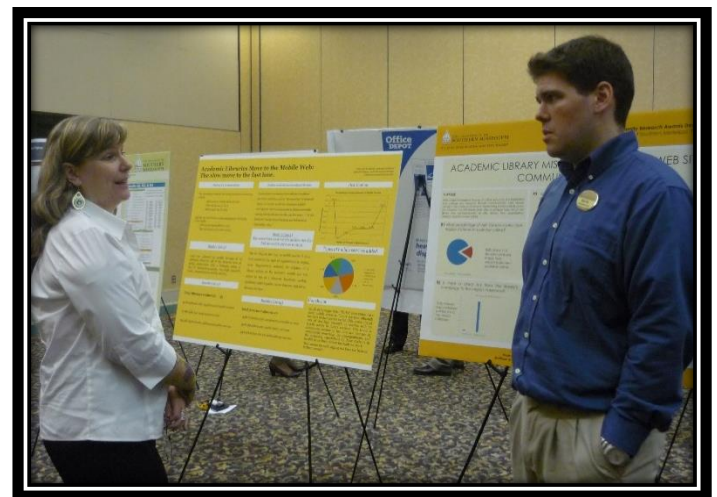


SLIS Research Table, URAD 2015



MLIS student Stacie Watts presented research on the history of Cat Island to the Pass Christian Historical Society, April 13<sup>th</sup>.

See column "Student Associations, Events" for information about student participation in the Society of MS Archivists conference.



Dr. Bomhold & Dr. Griffis with posters, URAD 2015

### University Research Awards Day (URAD)

USM Thad Cochran Center, Nov. 21, 2014

Dr. Teresa Welsh, Chair-Elect of the University Research Council, chaired the table displays.

SLIS Faculty research posters at URAD:

- Dr. Catharine Bomhold, "Academic Libraries Move to the Mobile Web: The Slow Move to the Fast Lane"
- Dr. Stacy Creel, "Reality Really? An Analysis of Selected Quick Pick Titles"



Dr. Yu with poster, URAD 2015

## Student Associations News

### LIS Student Association (LISSA)

#### Officers for 2014-15

President – Elizabeth La Beaud

Vice President – Colleen Smith

Secretary – Emilie Aplin

Webmaster – J.J. Crawley

Newsletter editor – Candice Cloud

Faculty advisors – Dr. Cindy Yu, Dr. Matthew Griffis

#### LISSA Update

by Dr. Matthew Griffis, LISSA Faculty Co-Advisor

The LISSA executive committee has been very busy this year – in the spring 2015 term especially, LISSA has continued its commitment to service in the community and beyond.

In February, Dr. Catharine Bomhold approached LISSA and asked it to support the Southern Miss Krewe of Readers, an outreach initiative of the College of Education and Psychology Council on Community Literacy and Reading (CCLR). The project encourages children in the greater Hattiesburg community to read by building literary-themed parade floats that distribute books to children. If funded, the project, scheduled for fall 2015, will be considered a joint project between the Krewe of Readers and LISSA.

Several LISSA officers volunteered their time at this year's Fay B. Kaigler Children's Book selling LISSA t-shirts and collectibles at the LISSA table. This year's collectibles were children's lit-themed fridge magnets. Proceeds from sales help fund LISSA activities, most notably the ALA Student-to-Staff program and the McCain Library and Archives' "Digi Day" workshops.

This June, LISSA will once again sponsor the McCain Library & Archives' Digitization workshop, "Digi Day". The workshop provides volunteer students hands-on training and experience in digitization practices and techniques. Another Digi Day workshop will be offered this summer; watch for announcements in lisnews listserv.

After receiving positive feedback from SLIS and broader LIS communities on the inaugural issue of our newsletter *LISSA Links*, a spring 2015 issue will be available in April and will feature some course elective highlights, info about British Studies 2015, and more.

LISSA broadcasts its meetings via Blackboard and meeting dates are announced via the SLIS listserv.

You are invited to join our Facebook page:

<https://www.facebook.com/southernmisslissa>.



Elizabeth LaBeaud and Emilie Aplin  
USM Children's Book Festival

#### NanoDays at USM Cook Library

Dr. Stacy Creel presented at "Come See What's so Big about the Super Small" a NanoDays educational program, USM Cook Library, March 30<sup>th</sup>, 2015. LISSA & SMSA member Janine Smith was a volunteer.





## Southern Miss Student Archivists (SMSA)

### Officers for 2014-15

President: – Colleen Smith

Media/Public Relations Coordinator – Mary Dugan

### Southern Miss Student Archivists News

By Dr. Teresa Welsh, SMSA Faculty Advisor

Congratulations to SMSA President Colleen Smith, who was named one of the top five student organization presidents at the USM Office of Student Activities Awards Day event, Apr. 28<sup>th</sup>.

SMSA students have been active this semester, volunteering and working in cooperation with LISSA at the Children's Book Festival to staff adjoining tables with promotional materials as well as fundraising items. SMSA and LISSA co-sponsored afternoon coffee and cookie breaks on Wednesday and Thursday afternoons for conference participants.



As a fundraiser, SMSA sells book-related pins as well as canvas book bags (\$15). Funds are used to promote archival education and funding to attend archival conferences and workshops.

## Society of Mississippi Archivists Conference

The Southern Miss Student Archivists sponsored a panel session at the SMA Bi-Annual Conference at Long Beach USM Gulf Coast Library, April 17<sup>th</sup>.

The panel on Thursday, April 17<sup>th</sup>, led by SMSA President Colleen Smith, *Practical Experience in Archival Education and Training* included:

Colleen Smith, "Analysis of Archival Programs and Practicums in U.S. ALA Accredited Programs"

Emilie Aplin and Elizabeth La Beaud, "Digi Days"

Stacie Watts, "Intertwining Practical Research, Public History, and Local Art: The 'Cat Island by Kayak: A Retrospective' Exhibit."

## University Libraries Edible Book Festival

University Libraries, LISSA, and the Southern Miss Food Research Group hosted the Edible Book Festival in the Cook Library Learning Commons Gallery Apr. 13

Since its inception in 1999, the International Edible Book Festival is held annually around April 1 - the birthday of Jean-Anthelme Brillat-Savarin (1755 - 1826) who is the French author of "Physiologie du goût." Dozens of libraries and cultural organizations around the world hold festivals to celebrate his work.

### LISSA Edible Book entry

*Curious George*



### SMSA Edible Book entry

*Classic Children's Books*



### Best in Show Edible Book

by LISSA & SMSA member J.J. Crawley

## LIS British Studies

Dr. Griffis and Dr. Welsh are preparing for British Studies class of 2015. The class of 21 is composed of LIS grad students from across North America: Clarion University, Indiana University, San Jose State, University of Alberta, University of North Carolina Greensboro, University of Rhode Island, University of South Carolina, University of Tennessee, University of Texas Austin, University of Toronto, University of Washington, Wayne State University, as well as six from the University of Southern Mississippi.

The British Studies Program is headquartered in King's College Dorm, London, near Waterloo Station, a short walk from Westminster, Trafalgar Square, and the Theater District. A few days are spent in Edinburgh at a University of Edinburgh dorm, and students will have a mini-break to explore U.K. and collect information for their research paper.

Students earn 6 hours of graduate credit while learning from British librarians and archivists at sites such as the British Library, Oxford Bodleian Library, St. Paul's Cathedral Library, and Edinburgh Central Library.

Each summer is a bit different and for the first time last summer we visited Stowe House School Library, the Royal Botanic Gardens at Kew, and Westminster Abbey Library. For more information visit the British Studies link at: <http://www.usm.edu/slis>



Royal Botanic Gardens Library, Art & Archives  
Kew, London



University of Edinburgh  
New College Library Rare Book Collection



British Studies Class of 2014  
King's Cross Station, London

For examples of British Studies students' research, see the historical research paper by Matthew Leavitt (British Studies 2011, MLIS 2012) in this issue and the research poster on the next page by Laura Kotti (British Studies 2014) presented at a Graduate Student Poster Session at the University of South Carolina.





# Does Family Matter: The Parental Roles of Young Adult Media

By Antoinette Giamalva

Access Services Librarian, Delta State University

## Introduction

In young adult media there are different roles that parents of the main characters symbolize. The role of parental figures can vary in their original conception and throughout media forms. Readers and viewers have their opinions about how parental figures representation should be characterized. Sometimes parental figures are what drive the stories along in a more interesting manner. The four types of parental presences represented are: a healthy parental presence, lack of parental presence, a broken parental presence, and a substitute parental presence. Readers and viewers of young adult media have many questions about the roles that parental figures have in the young adult main characters lives. What exactly is the role of the parental figure? Should there be any parental presences at all? How does the story flow with or without them? This article will explore examples of all four different parental presences in media forms of television series and books.

The role of parental figures can vary in their original conception and throughout the media forms itself. Readers and viewers have their opinions about how the parental figures should be represented and if they should be represented at all. Sometimes the parental figures are what drive the stories along in a more interesting manner. This article will explore examples of all four different parental presences in the media forms of television series and books. Data will be collected from popular television and book series.

## The Parental Presences

The role of parents is important in young adults' lives no matter what presence they might have. In the book *Teen Genreflecting 3: A Guide to Reading Interests* (2011), Diana Tixier Herald states, "Teens are all about relationships with those they are attracted to, those with whom they live, and those with whom they spend all their time..." (p. 21). Herald goes on to state that "Adolescence is also when teens

evaluate what family means to them; for many it is a time of drawing away, but for others it is a time of clinging to those lifelong relationships" (p. 21). The four presences that will be researched and discussed are: a healthy parental presence, a lack of parental presence, a broken parental presence, and a substitute parental presence.

### *Healthy Parental Presence*

A healthy parental presence is when the young adult has a strong bond with their mother or father and usually steams from the nuclear family. The healthy parental presence has its positives and negative but overall the young adults in the end appreciate having their family there to support them. In the book *Essentials of Young Adult Literature* (2010), Carl M. Tomlinson and Carol Lynch-Brown explain that "the period of time from middle school through high school is usually spent in close contact with family members. Stories often show the struggle between parents and adolescents" (p. 44). Even though problems exist between adolescents and their parents it does not mean the parental presence is broken, but just a normal family element.

In the book series *Percy Jackson and The Olympians*, Rick Riordan portrays a healthy relationship between the main character Percy and his mother, Sally. Percy and Sally have been on their own and the way Percy thinks of his mother is one rarely seen in young adult novels. In *The Lightning Thief* (2005), Riordan describes how Percy thinks of his mother before we meet her, "Her name is Sally Jackson and she's the best person in the world" (p. 29). Later in the same chapter, we see that their bond is so close that, Percy remarks,

My mother can make me feel good just by walking into the room. Her eyes sparkle and change color in the light. Her smile is as warm as a quilt. She's got a few gray streaks mixed in with her long brown hair, but I never think of her as old. When she looks at me, it's like

she's seeing all the good things about me, none of the bad. (p. 32-33)

It is clear from the text above that Sally truly loves her son because she tries to understand his expulsion from school and knows that he is special.

Sally harbors a secret from Percy and he does not make her feel bad about keeping the secret. He does not have time to adjust to the betrayal because she is kidnapped and taken to the Underworld. When he finds out where she is he never loses his focus on finding her. In the book *The Lightning Thief* (2005), we see Percy's thoughts on the matter, "All I cared about was my mom. Hades had taken her unfairly, and Hades was going to give her back" (p. 159). This is presented as a strong healthy parental presence, because they have been through so much together that all he wants is to get his mother back.

Another book series that represents a healthy parental presence is between Clary Fray and her mother, Jocelyn, in *The Mortal Instrument* series by Cassandra Clare. Jocelyn is a single parent protecting her daughter's life from secrets of the past, but their relationship is more challenging than Percy and Sally's. Jocelyn does not tolerate Clary's normal teenager attitude. In fact she is scared of Clary getting hurt that she tries to micromanage her life. In the book *City of Bones* (2007), Clary talks to her best friend Simon about how her mother reacted when they were late, "'I disappointed her, I let her down, I made her worry, blah blah blah. I'm the *bane* of her *existence*,' Clary said, mimicking her mother's precise phrasing with only a slight twinge of guilt" (p. 19).

Clary keeps the feelings of teen angst racing through her, but when her mother is kidnapped, she does change. Their mother and daughter relationship proves to be a healthy parental one when Clary does not waste any time racing towards their apartment to try to save mother. Their healthy parental presence rises above any hard feelings that might have been there before. They are a strong family of two and will stay that way.

Where the past examples have shown secrets that challenge a healthy parental presence, in the

*Divergent* series by Veronica Roth, the healthy parental presence is strong; however, no big secrets are revealed. Even with a small strain on their relationship, Tris could not think about killing her parents during a simulation. The decision she makes can be seen in *Divergent* (2011) through her thoughts, "I released the trigger of my gun and drop it. Before I can lose my nerve, I turn and press my forehead to the barrel of the gun behind me" (p. 396). This parental presence represented is a healthy one. Even though Tris is a young adult, she still values the importance of family.

In the television series *Teen Wolf* there are two illustrations of healthy parental presences. Melissa McCall and Sheriff Stilinski both are excellent parents to the main characters Stiles Stilinski and Scott McCall. Scott McCall and his mother have been on their own and so has Stiles and his father. Melissa and Scott have such a close relationship that they can talk to each other about almost everything. For example in the first season in the episode, "Wolf Moon" (Mulcahy, 2011) it depicts this close relationship:

Melissa: Is this a party or a date?

Scott: Maybe both.

Melissa: And her name is?

Scott: Allison.

Melissa: Allison. Nice.

The close relationship between Melissa and Scott is depicted again later on in the third season when Scott cannot control his werewolf powers in front of his father. Melissa takes him aside and says,

Melissa: You told me, you and Stiles learned a way to control this.

You find an anchor, right? Find your anchor.

Scott: My anchor was Allison. I don't have Allison anymore.

Melissa: Then be your own anchor. You can do this, Sweetheart. Let me tell you something every teenage doesn't believe, but I swear to you is the absolute truth. You fall in love more than once. It'll happen again. And it'll just be as amazing and extraordinary as the first time and maybe, just as painful.



But, it will happen again. I promise and until then be your own anchor. (Mulcahy, 2014).

This speech illustrates that Melissa has accepted her son's changing into a werewolf, and provides a strong support system for him. Even though she may be supportive and understanding, she has the ability to be firm and reprimand him when needed.

For Stiles and his dad, they have a slightly different relationship than Melissa and Scott. Their relationship resembles a strong healthy parental presence, because they are the only family they have left. In "Perishable" (Lynch, 2014b) during the fourth season, this earnest feeling of just having each other is represented through this interaction:

Sheriff: I keep things from you because you don't need to know everything.

Stiles: Yes I do. I have to know everything.

How else am I supposed to take care of you?

Sheriff: You're not supposed to take care of me. I'm the dad, you're the son. You get it!

Dad...son. I take care of you.

Stiles: We're supposed to take care of each other.

Even with the healthy relationship of wanting to help each other survive, Stiles and his father have a close enough relationship that when one messes up in life, they are not mad at each other, and if they do get mad it is not for long. When Stiles gets his dad put on probation at his job this scene unfolds in the second season episode, "Raving" (Mulcahy, 2012):

Sheriff: It was decided that the son of a police chief stealing police property and having a restraining order filled against him by one of the towns most respected attorney did not reflect well on the county.

Stiles: They fired you.

Sheriff: No...it's a leave of absence. It's temporary.

Stiles: Did they say it was temporary?

Sheriff: Actually no. You know what, it's fine. Don't worry about it. We're gonna be fine.

Stiles: Hey...dad. I don't get it. Why aren't you angry at me?

Sheriff: I don't know. Maybe I don't want to feel any worse than I already do, by, ah... having to yell at my son.

Through the trials that Stiles and his father, they overcome hardship, representing a healthy parental presence in Stiles' life that he values and he would go and save him at any cost, just like Scott would do for his mother.

Another example of healthy parental presence within a young adult television series is *Supernatural*. Dean Winchester and his father are constantly on the road hunting demons in an unstable environment. Their demon hunting and travel created a unique bond between them. In the book *TV Goes to Hell: An Unofficial Road Map of Supernatural* (2011) edited by Stacey Abbott and David Lavery, Simon Brown in his essay "Renegades and Wayward Sons" states, "But as Dean openly admits, this isn't actually his world at all; it is his father's. He says, 'I worshiped him. I dressed like him. I listened to the same music' (Sgriccia, 2009). Like his father, he is a mechanic, and thus is able to take care of the car his father gave him. The aforementioned trappings that surround Sam and Dean are all adopted by Dean to imitate his dad (p. 67).

Dean had a healthy relationship with his father because he wanted to be just like him. John's disappearance and death affects Dean hard enough that he would stop at nothing to get him back or save his life, even make a deal with a demon.

According to the research, a healthy relationship helps main characters grow into outstanding citizens and idolize their parents. They have a good head on their shoulders and the bond is unbreakable through hidden secrets, attempts on their life, and anything that might stand in their way of a good relationship.

### *Lack of Parental Presence*

Lack of parental presence is when the young adults in the media do not have a parental presence in their lives at all, and it may come from death or abandonment of a parent. According to Meredith Goldstein in her article "Grown-ups Make a Comeback in Young Adult Books," (2014) "dystopian

novels often demand that the adults are out of the picture for plot purposes” (p. 2). Not only does a lack of parental presence seem to produce a good plot for the young adult main characters, but Donna E. Norton in her book *Through the Eyes of a Child: An Introduction to Children’s Literature* (2011) explains, “strong young protagonists in contemporary novels often overcome obstacles related to family problems caused by adult family members” (p. 366).

Out of the book series, two are in the Dystopia genre, *The Hunger Games* (Collins, 2011) and *The Maze Runner* (Dashner, 2012), through both of these book series we see a lack of parental presence in their lives. The parents are phased out of the story or given a negative representation that the main characters in the series have to be the responsible party.

In *The Maze Runner* series by James Dashner, Thomas’ mother makes a huge sacrifice at the end of *The Kill Order* (2005), “she’d known the knock was coming far before it happened. And she wanted to be strong for her son. Make the boy think that the new life that awaited him was a good thing” (p. 325). Her son has been chosen to help find the cure for their world. She knows that this means she has to let him go, but it is hard for the both of them because he was so young and she loves him.

We see how Thomas fairs in *The Maze Runner* (2014) when he is sent to The Glades without any memories of his parents. Once he is established in The Glades he takes on the leadership of the band of boys to help them survive. With no parental figures in his life, this does not stop him from becoming a big brother of the band of boys. The lack of parentage has made him grow up fast; however, he has grown in strength and a good moral upbringing.

In a way Thomas’ character resembles Katniss in *The Hunger Games* trilogy by Suzanne Collins, except she had a parental presence in her life before losing them. Katniss Everdeen lost her father in a mining accident and her mother withdrew from their family due to depression. Katniss had to provide for her family to survive. Katniss never forgave her mother for withdrawing when they needed her. This is

depicted in Katniss’ thought in *The Hunger Games* (2008), the district had given us a small amount of money as compensation for his death, enough to cover one month of grieving at which time my mother would be expected to get a job, but she didn’t. She didn’t do anything but sit propped up in a chair or, more often, huddled under the blankets of her bed, eyes fixed on some point in the distance (p. 26-27). Katniss was mother, father and sister to her sister, Prim as life continued on for the Everdeen family.

When Prim is selected during the reaping, Katniss steps up and protects her by taking her place. It is hard for Katniss to leave her family, given a lack of parental presence due to her father’s death and mother’s withdrawal. Before she goes to The Games she constructs a list of instructions for both Prim and her mother so they can survive. She talks with her mother before she leaves and tells her, “You can’t clock out and leave Prim on her own. There’s no me now to keep you both alive. It doesn’t matter what happens. Whatever you see on the screen. You have to promise me you’ll fight through it!” (p. 35). Katniss is more of a parent to her mother, since she has not been there in her own life as a parental presence. We can see how Thomas and Katniss’ characters have built strength and independence due to the lack of their parental presence. However, within the television series of *The Vampire Diaries* and *The Flash* lack of parental presence breaks or makes the main characters.

Elena Gilbert in *The Vampire Diaries* experienced a loss of substitute, or adoptive, parents and a lack of parental presence. In the first season during the “Pilot” episode (Siega, 2009), viewers witness Elena trying to make herself stronger; she says, “I will no longer be the sad little girl who lost her parents. I’ll be someone new. It’s the only way I’ll make it through.” Throughout season one we see her trying to be a brave young woman getting over her loss by being a helping hand to her Aunt Jenna in raising her younger brother, Jeremy.

Elena has barely gotten over the loss of her adoptive parents when she loses her biological parents. Her



biological parents have formed an alliance with a murderer who wants to kill her. Only her biological father, John, tries to save her life at the end, trading his life for hers. In a letter to Elena in the second season episode of “The Sun Also Rises” (Sommers, 2011), we see John Gilbert saying,

Elena, it’s no easy task being an ordinary parent to an extraordinary child. I’ve failed in that task, and because of my prejudices, I’ve failed you. I’m haunted by how things might’ve played out differently if I’d been more willing to hear your side of things. For me, it’s the end. For you, a chance to grow old and someday do better with your own child than I did with mine. It’s for that child that I give you my ring. I don’t ask for your forgiveness, or for you to forget. I ask only that you believe this; whether you are now reading this as a vampire or as a human, I love you all the same as I’ve always loved you, and always will.

As John sacrifices his life for Elena’s it is obvious that he really does try to make amends for giving her up and siding with the enemy.

After the death of her biological parents, her adopted parents, and then her substitute family of Alaric and Aunt Jenna, Elena does not become stronger, but in fact weaker. Her mental state becomes emotionally unbalanced, and she takes each new death of her friends harder. The lack of parental presence has hindered her character’s growth and made her weak.

Unlike Elena, Barry Allen does not grow weaker. He loses both of his biological parents—his mother to death and his father to jail. His mother dies and his father is accused of murdering her and is arrested. We see that Barry does not want to stop searching for his mother’s true killer to avenge her death and clear his father’s name. Through the twelve years after his mother’s death, he never forgets her. She was always there to encourage him after being bullied as we see from a flashback in the pilot episode of the first season. Nora Allen tells him, “You have such a good heart, Barry. And it’s better to have a good heart than fast legs” (Siega, 2009). His mother helped him through challenges and when life gets

rough he misses her and tries to remember her advice.

His father is in his life more than his mother, but he does have that lack of fatherly presence due to being in jail. This lack of fatherly presence drives Barry to focus his free time on trying to clear his father’s name leading to a stunted social life. Overall, the lack of his parental presence in his life has made him both weaker and stronger—it has made him weaker in not helping his character grow in a healthy life, but stronger in being a better fighter and a more determined young man.

Overall, a lack of parental presence can break or build a character. However, it depends on how the lack of parental presence happens and how the relationship was before they were abandoned.

#### *Broken Parental Presence*

A broken parental presence is one where the parent figures are in the lives of the main characters, but it is not a healthy presence. It is harmful to the main characters emotional or physical growth. Judith A Hayn and Jeffery S. Kaplan (2012) explain that “all young people are curious about who they are, how they fit in, and more importantly, how they are perceived by others” (p. 20). If a young adult has a broken relationship with their parental role, then as they try to figure out “how they fit in” they might get lost.

In the book series, *The House of Night* by P.C. Cast and Kristin Cast, the main character, Zoey Redbird has a negative parental presence in her life. Zoey’s thoughts of her step-father are seen in *Marked* (2007) on the very first page as she names, John Heffer, “the Step-Loser.” P.C. Cast and Kristin Cast set the scene in the book to show that her step-father is really a loser with how he reacts to her when she is marked as a vampire. When he gets home he says, “Get thee behind me, Satan!” (p. 22). John goes on and says, “I told you that your bad behavior and your attitude problem would catch up with you. I’m not even surprised it happened this soon” (p. 22). He even refuses to send her to the academy that could help her with her transformation.

Zoey's step-father is the reason that her relationship with her mother changes from a healthy parental presence to a broken parental presence. Zoey wishes that their relationship could be back to how it was, as demonstrated with Zoey's thoughts in the book *Marked* (2007), "Ah, hell! I was sixteen years old, but I suddenly realized that I wanted nothing as much as I wanted my mom" (p. 16). She yearns for her mother's care, even when it is broken. She wants their relationship to be fixed and reaches out to her. She gets denied; however, as we see this scene unfold, "'Just... just tell him I'm spending the next couple days at Kayla's house because we have a big biology project due.' I watched my mom's eyes change. The concern faded from them and was replaced by hardness that I recognized all too well" (p. 18). Zoey tries to convince her mother to see how she has changed, but it only further breaks their relationship. The scene shifts to her mother, reasoning with her on her decisions with her new husband,

'I think that's the problem, Mom. You don't care enough to be aware of it. You haven't cared about anything but John since you married him.'

Her eyes narrowed at me. 'I don't know how you can be so selfish. Don't you realize all that he's done for us? Because of him I quit that awful job at Dillards. Because of him we don't have to worry about money and we have this big, beautiful house. Because of him we have security and a bright future.' (p. 18-19)

Zoey's broken parental presence pushed her to run away from her home to her grandmother's to find help.

A different type of broken parental presence is shown with Bella and her parents in the series *Twilight* by Stephenie Meyer. Bella's parents have not been in her life as parents. Her mother is more of a teenager, and her father is someone she only sees on occasion and calls him by his first name and not dad or father. In the beginning of the series Bella is being moved to Forks, Washington a town she never wanted to visit. In *Twilight* (Meyer, 2005) Bella's thoughts show how she really felt about traveling to

Forks when she explains, "that I'd been compelled to spend a month every summer until I was fourteen. That was the year I finally put my foot down" (p. 3-4).

Julie Just in her 2010 article "The Parent Problem in Young Adult Lit" states that "In *Twilight*, the only reason Bella meets the supernaturally good-looking Edward in the first place is that she has moved to her father's place in gloomy Forks, Wash.; that way her mother can follow around her new husband, a minor league ballplayer" (p. 1-2). Even though the move to Forks results in Bella dating Edward, she is still sacrificing her happiness for her parents. Bella sacrifices a lot for her mother—instead of it being the other way around—by leaving her friends, a sunny state, and everything she has really cared about to move to a place and lifestyle she does not like and a place where she does not have any friends.

Although her father attempts to be a father to Bella throughout the series once she arrives, it is obvious that their relationship is indeed a broken one because as we see in *Twilight* (Meyer, 2005) when she arrives and is greeted, "'Mom's fine. It's good to see you too, Dad.' I wasn't allowed to call him Charlie to his face" (p. 6). We can see from here and in Bella's thoughts throughout the book, she never refers to him as father or dad in actuality and only Charlie, no matter how hard he tries to be that parent figure. He seems to be in a losing battle.

Unlike in books, a broken relationship in television is often depicted throughout the series and tends to be utilized to move the plot more than it does in a book series. For example, in the television show *Teen Wolf* when Scott McCall's father comes back into his life, he is disrupting everything in it. A prime example of this is when Rafael McCall is trying to get answers from his son in the third season episode "Silverfinger" (Lynch, 2014a). Scott does not really care what his father thinks:

Rafael: I don't need a warrant. I'm your father.

Scott: No, you're a gene donor. I got my hair color from you. And that's all I got. So you're not allowed to play tough dad with me.



Even when Rafael tries his best to explain why he had been gone from his life, Scott doesn't want to hear it. Scott states it clearly in the third season "This house is full of accidents. The stairs? Maybe it was an accident. Maybe it was worse, but I don't need your apology. So see you at graduation. Or whenever you decided to show up again" (Andrew, 2014b). Their relationship has a long road to mend, but it appears that Rafael will be sticking around, instead of disappearing again. Where Rafael is actually trying to make up for his broken parental presence, Esther and Mikael Mikaelson in *The Originals* (Plec, 2013), make no effort to mend their relationship with their children, but instead try to end their life.

It is true that Rebekah, Elijah, and Niklaus Mikaelson are older than the normal young adults, but they have been stuck in their young adult bodies for centuries and their broken parental presence has been the theme of the show. Ever since its creation, creator Julie Plec knew that this series would be about family. In *The Vampire Diaries*, season three, Plec (2011) says in the special feature "The Original Vampires: The Beginning":

The season is about family. When we were able to take the Original family, and met the siblings and meet the mother and meet the father it became very clear to us that rather than it beginning a monster original tale, it really needed to be a tale of a family that had loved each other so much that in trying to keep it together, it tore it apart.

No matter how many years have passed, the parents have always had this control and fear over their children. In the third season of *The Vampire Diaries*, this is shown in a conversation with Niklaus and Rebekah, in the episode "Ordinary People" (Tobin, 2011) about their fear of their father,

Niklaus: Father would not like you handling a blade.

Rebekah: If I want to wield a blade, I shall wield a blade. Father need not know.

Niklaus: He'll find out. He always does.

Rebekah: That is because you always tell him.

Niklaus: I cannot help it. He frightens me.

Rebekah: He frightens us all. That is why we stick together as one. Always and forever.

Right, traitor?

Niklaus: Right.

From the beginning, this family has been split into children versus the parents.

In the season one DVD box set of *The Originals* a special feature called "The Original Vampires: A Bite-Sized Backstory," we learn from Elijah's narration that their father "mercilessly hunted us for centuries, laid waste to half of Europe." Even their mother Esther has made an indestructible weapon to kill all of her children, and we hear directly from her that her "only regret is that I didn't let you die a thousand years ago." Through this tormented family who has been in battle for thousands of years, there is a broken parental presence that can and will never be mended until one side of the war has truly fallen. The effects of that this war has on Niklaus, Rebekah, and Elijah is shown in how they view their own relationships and ultimately their own children-parent relationships.

In the end, a broken family does provide a good plot element and help the main characters grow. The broken family does effect the growth of the main character(s) by either making them stronger or in a negative way into their adulthood

#### *Substitute Parental Presence*

A substitute parental presence is gained when the main character cannot trust or tell their real parents what is going on, due to a threat on their life, or that their nuclear family has been removed from their life. This presence can be defined as either an extended or alternative family group. According to Carl M. Tomlinson and Carol Lynch-Brown (2010), an extended family may consist of "aunts, uncles, grandparents, and cousins" (p. 44). The alternative family group has many different types of groups, for the sake of this article it is defined as family friends and community members.

The book series that characterized this type of presence are the *Harry Potter* series and the *Twilight* series. Within the *Harry Potter* series the main character, Harry Potter, had a number of substitute

parental presences, such as his Aunt Petunia and Uncle Vernon, The Weasley family, Remus Lupin, and Sirius Black. Harry's aunt and uncle gained custody over him after his family was murdered and "he's lived with the Dursleys' almost ten years, a ten miserable years," (Rowling, 1997, p. 29).

Within those ten years, he was subjected to mistreatment. His aunt and uncle made him live in a cupboard below the stairs and treated him as an unwanted guest. This display of disdain towards him did not change at all through the book series. In the book, *Harry Potter and the Goblet of Fire* (2000), Harry is about to go to the Quidditch World Cup with the Weasleys and his aunt and uncle does not tell him good-bye:

'Well...bye then,' Harry said to the Dursleys. They didn't say anything at all. Harry moved towards the fire, but just as he reached the edge of the hearth, Mr. Weasley put out a hand and held him back. He was looking at the Dursleys in amazement.

'Harry said good-bye to you,' he said. 'Didn't you hear him?'

'It doesn't matter,' Harry muttered to Mr. Weasley. 'Honestly, I don't care.' (p. 48)

This interaction demonstrates that is a normal feeling of discontent that Harry has with his aunt and uncle.

When Harry learned of his true identity and makes his arrival at Hogwarts, he runs into other substitute parental presences that are more of a positive influence in his life. For example as soon as he meets the Weasleys in *Harry Potter and the Sorcerer's Stone* (1997), Molly Weasley takes a motherly hand with him. She shows him how to get through the wall to get to the train, even before officially meeting him. This motherly affection is further seen in a Christmas scene:

'I think I know who that one's from,' said Ron, turning a bit pink and pointing to a very lumpy parcel. 'My mom. I told her you didn't expect any presents and-oh, no,' he groaned, 'she's made you a Weasley sweater.'

Harry had torn open the parcel to find a thick, hand-knitted sweater in emerald green and a large box of homemade fudge.

'Every year she makes us a sweater,' said Ron, unwrapping his own,' and mine's *always* maroon.'

'That's really nice of her,' said Harry, trying the fudge, which was very tasty. (p. 200-201).

Molly Weasley automatically included Harry in this family tradition and continues through the rest of the series as a surrogate mother in the wizarding world. Not only does Mrs. Weasley embrace Harry but the whole family embraces him as one of them. Harry Potter also has family friends of Remus Lupin and Sirius Black, who appear in the third *Harry Potter* book, *Harry Potter and the Prisoner of Azkaban* (Rowling, 1999), Lupin protected him from the actions of the dark lord, and Black even offered Harry refuge from his aunt and uncle. Black and Lupin are other positive substitute parental presences in his life who remain strong within their journey of his young adult life.

Harry Potter is not the only literary character that has had a substitute parental presence. Bella Swan and Edward Cullen had substitute parents. In some ways, they shared the same substitute parents, Carlisle and Esme Cullen, in the *Twilight* series. Even though they have the same substitute parents, they each have a different, yet similar relationship with them.

Carlisle saved Edward's life when he was stricken by sickness at the age of seventeen and brought into the Cullen coven when Carlisle turned him into a vampire. Throughout the years even though he was raised as a vampire by them, he never calls them mom or dad, just simply by their first names. In town, Edward is believed to be the adopted son of Carlisle and Esme, but that is just to keep up appearances.

Carlisle and Esme care about Edward and that can be seen in the first book of the *Twilight* (2005) series when Edward comments to Bella how they feel about him finally finding someone to date:

'Are happy to see me happy. Actually, Esme wouldn't care if you had a third eye and webbed feet. All this time she's been worried about me, afraid that there was something missing from my essential makeup, that I was too young when Carlisle changed me... She's



ecstatic. Every time I touch you, she just about chokes with satisfaction.’ (p. 327)

Just as with Edward, Carlisle and Esme took in Bella Swan, but before she was a vampire. They became very protective of her because she was special to Edward and could see that she would be a big part of their family one day. When her life is threatened by another vampire, they are quick to help her. For example, Esme is willing to be mistaken as Bella and says that they are “Trying to confuse the smell. It won’t work for long, but it might help get you out” (p. 402). Esme is willing to risk her life for Bella because she is part of their world and needs guidance and a parental hand when it comes to knowing how vampires work, especially when one is still human and needs protection.

In the television series, *Supernatural*, *Teen Wolf*, and *The Flash*, there are examples of substitute parental presences. The show *Supernatural* has an underlining message of family between the two brothers, Sam and Dean Winchester. When their father is murdered, they have Bobby Singer and the Harvelle family who takes on the role of substitute parental presence in their lives. In the book *TV Goes to Hell: An Unofficial Road Map of Supernatural* (2011) edited by Stavey Abbott and David Lavet, Simon Brown states in the chapter “Renegades and Wayward Sons,” “Once John dies, Bobby takes on the mantle of the father figure” (p. 72). Bobby takes on teaching them to hunt, giving them guidance and a hit on the head when they go astray. Sam and Dean learn to appreciate him and even though they do not call him an uncle or even another father, the bond that is created through the series. The Harvelle’s, according to Bronwen Calvert in the chapter *Angels, Demons, and Damsels in Distress* of the same book explains:

If we put the Winchester’s and the Harvelles into a family context the characters’ relationships make more sense. Jo as ‘sister’ to Sam and Dean is understandable: indeed, the questions of her parentage hovers in the background once the brothers have met Ellen and learned that ‘John was like family once.’ (102)

Ellen takes a maternal stance toward the brothers, calls them ‘boys,’ and offers them first a place to stay at the Roadhouse and then advice and information in the same way that Bobby does (2011, Brown, p. 102). The Winchester boys, though parentless never truly are alone with the community of family friends around them.

Another character that has a family friend that takes the place of their mother is Stiles from *Teen Wolf*. Stiles’ mother died when he was young and Scott’s mother took up the role has a surrogate mother throughout his life. One example of this is when Scott’s mom holds him when he is having a nightmare and tries to bring him out of his manic state in the third season episode of “Riddled” (Andrew, 2014a). In “Silverfinger” (Lynch, 2014a) of *Teen Wolf*’s third season when Stiles goes to Melissa for help for his friends, she notices that he is different and takes him into a hospital room, where she works. It is evident that she has his best interest at heart as if he was her own son as she gives him a sedative. Stiles’ responds to all of her caring in this episode by saying, “Thanks mom” and we finally get to see that our assumptions on that relationship is true.

In the television show *The Flash*, there is another example of a different substitute parental presence, one that almost resembles some of Harry Potter’s family presence, but a family friend who actually takes in the main character Barry Allen. Through the series that Barry and Joe West have a close relationship, but there is always a push and pull that Joe is not his true family. Barry’s mother has passed away and his father was convicted for her murder when he was eleven years old.

Joe’s fatherly instinct comes in frequently and tries to protect him even at an early age as shown when he tries to abide by Henry’s, Barry’s father, wishes to keep him away from the prison in the first season episode, “Fastest Man Alive” (Nutter, 2014):

Barry: Then why can’t I go see him!

Joe: Because I said so.

Barry: You’re not my father! You can’t tell me what to do!

Joe: Right now I'm the only adult who gives a damn about what happens to you. So yes, I can tell you what to do. Go to your room.  
Barry: I hate you!

This relationship develops into one of support through the years and Barry ends up working with him at the police department once he graduates college. Throughout the season, it is obvious that that Joe cares for him and wants to protect him, no matter Barry's age. In "Fastest Man Alive" (Nutter, 2014), when Joe finds out Barry has been putting himself in danger, he confronts him saying, "... and you're going to do what? Catch them? Are you sure? You think because you run real fast that you are invincible? You're NOT! You're just a kid, *my kid*" (Nutter, 2014). Barry grows to accept this at the end of the episode when he tries to apologize for saying he was not his father when Joe called him his kid yet again. Barry makes Joe feel accepted as he says:

You're right, you're not. You're just the man who kept me fed and in clothes. Who stayed by my bed 'til I fell asleep at night because I was afraid of the dark. Helped me with my homework. Taught me how to drive and to shave. You dropped me off at college. Sounds a lot like a dad to me.

Even though their relationship is a substitute parental presence, it mimics one of a real nuclear family and has its struggles just like a real family setting.

Research on substitute parental presence illustrates that even though someone may not be part of the original nuclear family the main characters gain support and at least a roof over their heads in some scenarios. The main characters can thrive under the presence regardless if it is negative or positive because they still learn from them and gain insight to the world in how they will grow up and overcome obstacles.

## Conclusion

Parental presences are important in young adult multi-media as provided in the research and examples above. Young adults can be supporters of the parents, whatever the type, being depicted, and these same young adult viewers and readers can be

the multi-media parents' harshest critic. In the *Boston Globe's* article "Grown-ups Make a Comeback in Young Adult Books" (2014) Meredith Goldstein quotes Nancy Siscoe, "It's rare to see a real, defined kid character in an adult novel. In teen and middle grade [novels], kids have to deal with adults. There's no getting away from them" (p. 3). In the real world, young adults are faced with some form of parental presence in their lives. Regardless of the form, it can shape the main character's experience in life and give life lessons to its readers and viewers as provided by the different main characters illustrated in this research.

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# United Kingdom Libraries during World War II

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*"We all know that books burn – yet we have the greater knowledge that books cannot be killed by fire. People die, but books never die. No man and no force can abolish memory...In this war, we know, books are weapons."*  
– Franklin D. Roosevelt ("Books," 1997)

*"Let Us therefore brace ourselves to our duties, and so bear ourselves that, if the British Empire and its Commonwealth last for a thousand years, men will still say: 'This was their finest hour'."*  
– Winston Churchill ("World War II," 1997)

## Introduction

Cultural attacks, especially attacks on books, have been common place during conflict throughout history (Stubbings, 1993). Libraries in particular have been targeted since books and libraries are symbols of cultures (Valencia, 2002). Nazi Germany was not an exception to attacks on culture before and during World War II (Figure 1). A total war had begun under the Nazis which meant that no area of society was exempt from attack (Valencia, 2002).



Figure 1. St. Paul's Cathedral after bombing of Dec. 1940  
(Herbert Mason)

One of the first attacks on books in pre-WWII was in 1933 when a group of Nazi students burned a selection of un-German books, which caused uproar throughout the world (Valencia, 2002) but it did not deter or prevent the Nazis from continuing their cultural attacks. Private and public libraries were often raided by the Nazis and materials destroyed due to content being un-German (Valencia, 2002).

Destruction of libraries and books escalated once the war officially began. National and research libraries were targeted in occupied countries because these

libraries gave the people a cultural identity, showed the level of development, and afforded the people a chance to learn and maintain their culture (Valencia, 2002). Polish libraries and museums were targeted once the country was invaded by the Germans (Stubbings, 1993). Libraries and buildings were bombed, looted, and burned which continued throughout the war (Stubbings, 1993). The Germans wanted to keep the Polish as a working third class and destroyed the libraries in order to keep the people in this class (Valencia, 2002).

Some books and library materials were not destroyed like the Polish books and libraries. Jewish books and libraries were not destroyed, they were preserved and saved by the Nazis (Valencia, 2002). The Jewish culture and people were destroyed but the Germans wanted to keep a record of the culture to know how to combat other problem culture. Research libraries were established to study the Jewish Question and to produce a formula against problem cultures (Valencia, 2002).

Nazi Germany gained control of mainland Europe and the attack on the United Kingdom and London was inevitable. With the Nazis' actions towards other libraries in Europe, libraries in London knew that the city was going to be attacked and that they needed to protect and preserve their collections (Stubbings, 1993). The libraries with enough funding went through great strain to save their collections while other libraries struggled to protect their collections.

Sem Sutter describes the value of books and libraries to a culture and how important it is for a nation to protect these materials.

*In normal times we may not appreciate the extent to which books are symbols of national identity ... But when war, revolution or other forms of unrest disrupt the otherwise orderly world of libraries, we can see concretely how very much books matter and to whom and why. The lengths to which conquerors go to seize or destroy books, the perils that conservators courageously face to safeguard them, the efforts of rival political factions to possess them in order to gain the legitimacy that they can confer: all illustrate the powerful symbolism of the written word. (Valencia, 2002)*

### **Purpose of the Study**

The purpose of this study is to examine how the British Library and St. Paul's Cathedral Library protected their collections from destruction during World War II. The study will also discuss the means to which services were provided to users and how the other libraries in the United Kingdom assisted in the preservation of these collections.

### **Research Questions**

R1: What are the strategies the British Library used to protect the library collection during World War II and what, if any, damages occurred to the collection?

R2: What services did the British Library provide to users during this time?

R3: What are the strategies St. Paul's Cathedral Library used to protect the library collection during World War II and what, if any, damages occurred to the collection?

R4: What services did St. Paul's Cathedral Library provide to users during this time?

R5: How did the National Library of Wales assist both the British Library and St. Paul's Cathedral Library during World War II?

### **Importance of the Study**

Libraries and books are very important to a nation or ethnic culture. The Nazis during World War II attacked libraries and books trying to destroy other cultures. When mainland Europe fell under the control of Nazi Germany, libraries in London decided to move their collection in order for these collections to be preserved. This study examines how the British Library and St. Paul's Cathedral Library, two large libraries in London, tried to protect their respective collections.

Since World War II, libraries and archives have been continuously attacked by opposing forces. Knowing the strategies these two London libraries established to protect collections can benefit other libraries in the future. The study will also demonstrate how collaboration with other libraries can allow for more efficient preservation of collections.

### **Literature Review**

#### **Events Leading to WWII**

The immediate years following World War I were still hectic with land and border disputes between various countries (Stokesbury, 1980). By 1924 peace seemed to have arrived in Europe (Stokesbury, 1980), but it was only the calm before the storm. Peace and stability lasted until 1929 when the world's economy crumbled. Each country of the world had their own economic problems and different ideas to fix these respective problems.

A small political group in Germany appealed to the German people and gained a fraction of power in the government during the 1930 elections (Stokesbury, 1980). In 1933 Adolf Hitler, the leader of the Nazi party, was named Chancellor of Germany and set forth the Nazi Revolution (Stokesbury, 1980). Soon the government was stripped of power and all Aryan-Germans would go into the future together (Stokesbury, 1980).

In late 1933, Hitler and Germany withdrew from the League of Nations' disarmament talks and eventually left the League of Nations all together. These actions bought Hitler the allegiance of the private German military (Stokesbury, 1980). Hitler moved military divisions into the demilitarized Rhineland in 1936 and received no resistance from the League of Nations.

Two years later, Hitler refurbished the head of the German military and annexed Austria into the German Republic (Stokesbury, 1980). When 1939 came, Hitler and Nazi Germany were poised to expand the Third Reich.

Hitler set his sights on the Sudetenland and Czechoslovakia which he took control of in 1939. People who opposed the new regime and Jews were killed in large numbers in this newly conquered land. Poland was the next area that Hitler wanted under his control and he continued demanding more land from the League of Nations (Stokesbury, 1980). Shortly after the Nazi invasion of Poland on September 1, 1939, Britain and France declared war on Germany which began World War II (Stokesbury, 1980). Poland was under Nazi control fairly soon after being invaded and the Nazis continued their land grab. The next logical area of land advancement was France and the Germans surprised the French on where the attack occurred. France fell to the Germans which gave the Nazis and its allies control of most of mainland Europe (Stokesbury, 1980).

The bombing of Britain began in August of 1940 (Stokesbury, 1980). After failing to cripple the British Air Force, Germany turned its sights on conquering Britain through night bombings on cultural significant London. London had been bombed at night for months but the will of the citizens did not falter. On December 29, 1940, Hitler sent a large number of the Luftwaffe to bomb London and break the will of the people (Gaskin, 2006). This night would be the heaviest London would be bombed, with many historical sites of the city being the targets of the Germans. The city was relentlessly attacked but the will of the citizens did not break regardless of the damage that was done to the city (Gaskin, 2006).

### ***Libraries during World War II***

Accurate literature about libraries during World War II was very important to this study. This literature explains how libraries were treated and viewed by the European people and why the British libraries took such great care to protect library collections.

A 1993 book by Hilda Uren Stubbings entitled *Blitzkrieg and Books: British and European libraries as Casualties of World War II* gives a basic background of the usefulness of libraries to cultures and how libraries have been targeted throughout history. The majority of the book is concerned with libraries in Europe and Britain during World War II. The book also gives specific information concerning the libraries of interest in this study.

One article written by Miriam Valencia in 2002, "Libraries, Nationalism, and Armed Conflict in the Twentieth Century" gives a thorough discussion about how libraries have been targeted during military conflict. Libraries and books are described as being one of the main components of a culture. The author describes how Nazi Germany attacked libraries and books to try to destroy the culture of the people that were being suppressed.

### ***British Library***

A 1977 book on the British Library during World War II, *The National Central Library: An Experiment in Library Cooperation*, gives a history of the National Central Library before it combined with other libraries to become the British Library. Chapters of the book describe how the National Central Library functioned before, during, and after World War II. These chapters illustrate the importance of funding and how it relates to the preservation of a library collection.

In *A History of the British Museum Library, 1753-1973* (1998), Harris wrote that the British Museum Library was one of the libraries that combined to form the British Library. A chapter of this book gives a detailed record of the processes and procedures of the British Museum Library during World War II including the evacuation of the collection, bomb damage that occurred to the building, and how the librarians catalogued and acquired material during this time.

The British Library Web site includes "History of the British Library," which provides a short history of the libraries that combined to constitute the British Library as well as a brief history of the British Library after the joining of the libraries.



### **St. Paul's Cathedral Library**

Literature concerning the St. Paul's Cathedral Library during World War II is scarce. The oldest literature is entitled *Saint Paul's Cathedral in Wartime, 1930-1945* published in 1946. The literature describes how St. Paul's Cathedral was targeted and functioned during World War II. The book makes mention of how the library transferred materials to the National Library of Wales at Aberystwyth where the materials were looked after by the librarians of that library. Bombs also penetrated the Cathedral and the first bomb landed in the Library aisle but was extinguished before damage could occur. This demonstrates the importance of relocating the library to a safe location.

Another piece of literature comes through personal communication with the Librarian of St. Paul's Cathedral Library (J. Wisdom, August 19, 2011). The communication provided extracts from Chapter minutes of the St. Paul's Cathedral Library from 1939 to 1944 that demonstrates how the library decided to move the collection and other valuable pieces to more secure locations.

The Web site of St. Paul's Cathedral Library includes a brief history of the Cathedral during the Second World War. The Website states that St. Paul's Cathedral was hit 28 times by German bombs during the Blitzkrieg night attacks. Miraculously the Cathedral and the Library did not suffer considerable damage during the attacks and stood for the courage of the British.

### **National Library of Wales**

Literature concerning the National Library of Wales during the Second World War was difficult to locate. After communication with a librarian, a book was located documenting the library during World War II. The book was written in 2002 by David Jenkins of the National Library of Wales and is entitled *A Refuge in Peace and War: The National Library of Wales to 1952*. The book includes a specific chapter documenting the materials that were stored during World War II for other libraries.

### **Methodology**

The study was organized by subject and then information was gathered through the use of many different resources. All subjects were searched using scholarly databases and library catalogs. The databases that were searched include: *Library Literature & Information Science Full-Text*, *ERIC*, *EBSCOhost Electronic Journals Services (EJS)*, *Academic Search Premier*, *Google Scholar*, and *WorldCat*.

The first subject that was researched was the British Library. The British Library's Web site gives a brief history of the library and of the libraries that were combined in 1971 to form the British Library. The compiled information from the British Library Web site was used to search the scholarly databases and library catalogs.

The next subject that was researched was St. Paul's Cathedral Library. The Web site provided a timeline of the events of the Cathedral and information concerning the library. Scholarly databases were used to find information on the library with limited results. Personal communication with the St. Paul's Cathedral librarian provided information concerning documented minutes and direction to other resources.

The third subject was the National Library of Wales. Information concerning the National Library of Wales could not be located through scholarly databases or library catalogs. Personal communication with the librarian of the National Library of Wales was required to locate relevant resources. This communication provided direction to resources obtained using interlibrary loan.

After locating resources and literature concerning specific libraries of the United Kingdom, literature concerning the history of the time was a necessity. First, scholarly databases were searched for information about the histories of libraries and a relevant article retrieved; a similar book was located through Google Books.

A list of books on the history of World War II was compiled and book reviews consulted about the content. The most relevant book was determined and located through Google Books.

## Results

*R1: What are the strategies the British Library used to protect the library collection during World War II and what, if any, damages occurred to the collection?*

The British Museum Library and National Central Library are two of the libraries that joined together to form the British Library (Library). During World War II these libraries were separate entities and functioned as such.

The National Central Library was the main component of the interlibrary loan system for all British libraries (Stubblings, 1993). When the war started in 1939, it was uncertain if the library would survive the war due to lack of funding (Filon, 1977). A Rockefeller Grant was awarded to the library which allowed the library to remain open for day to day operations (Filon, 1977). When the war started, the Information Department with the reference books and catalogs were moved to Bourne Lodge near Berkhamsted in a rented lodge (Filon, 1977). The most valuable and irreplaceable materials were safe outside of London while the main collection remained in London (Filon, 1977).

In April 1941 an air raid occurred that seriously damaged the collection of the National Central Library (Filon, 1977). On the night of the 16<sup>th</sup>, incendiary bombs hit the roof of the library igniting a fire. The fire soon spread to the lower levels of the building and the library collection (Filon, 1977). Fire crews were occupied and when the librarian arrived at the library on the 17<sup>th</sup>, most of the collection was destroyed (Filon, 1977). All records and books of the Adult Class Department, except books on loan, were destroyed by fire or water damage (Stubblings, 1993). Many other books were destroyed from this attack. Before the damage the National Central Library had 170,000 volumes in the collection; after the damage the collection decreased to 72,600 volumes (Filon, 1977). It was fortunate that some of the collection was evacuated and that the rest of the collection survived the fire and water damage.

The British Museum Library started discussing the evacuation of materials in 1933 and implemented this plan on 24 August 1939. All members of staff were used to pack the collection and by the end of the first day, ten tons of materials were being shipped to the National Library of Wales at Aberystwyth. By September 2 the National Library of Wales was housing 100 tons of materials from the British Museum Library which included 12,000 books, 12,000 manuscripts, and three-quarters of the Department of Prints and Drawings collection (Harris, 1998). Only 0.2 percent of five million books were moved to the National Library of Wales with the rest of the collection being moved to other locations within London.

Throughout the war more materials were evacuated to the National Library of Wales but it was still a fraction of the entire library collection. Even with evacuations and the removal of materials, the library felt that more needed to be done to protect the collections and buildings in London. The library established precautions against air raids that included fire fighters being located on site in Bloomsbury (Harris, 1998).

Unfortunately, damage did occur to the British Museum Library building and collections (Figure 2). Some minor building damage occurred during bombing raids in the autumn of 1940. Initially only a small amount of materials were damaged by the bombing.

Approximately 1,500 volumes were damaged but many of these materials were located in other collections or could be easily replaced. The major damage to the collection of the British Museum Library occurred on May 10, 1941 (Figure 2). The roof of the building caught on fire after dozens of incendiary bombs hit the building. A great deal of damage occurred to the buildings but the most significant damage occurred to the book collection. The extent of damage to the materials was approximately 240,000 volumes which included 175,000 books (Harris, 1998).

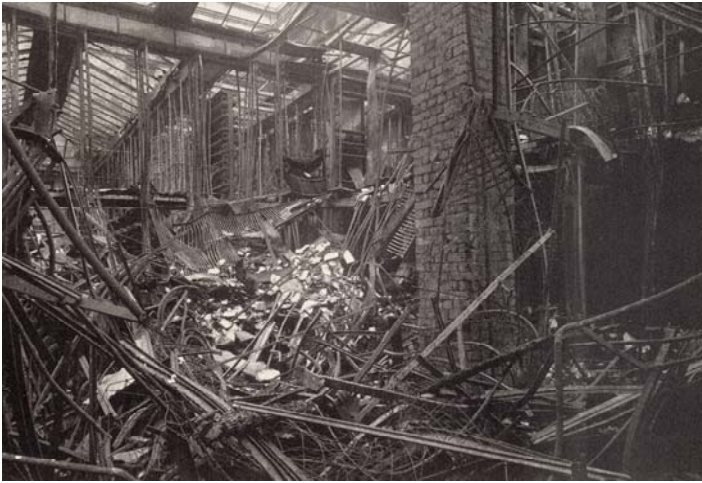


Figure 2. British Museum SW Quadrant Damage, May 1941 (Harris, 1998)

After this bombing, the Germans started to use heavier incendiary bombs that would do more damage to the buildings in London. Due to this fact, the first two floors of the Museum and Library were cleared for precautionary measures. Other precautionary measures were taken after the bombing of May 1941 and more materials were evacuated to outside locations throughout the war. By 1943, an additional 88,000 books were evacuated in order to preserve the collection (Harris, 1998).

*R2: What services did the British Library provide to users during this time?*

During World War II, the National Central Library continued to offer library services. These services were offered even though materials were being evacuated and library staff members being called to duty in the military. Issuance of books fluctuated throughout the duration of the war. During the first year, the number of books issued decreased from 58,000 to 50,000 and then to 39,000 in the second year of the war. The decrease in the number of books issued was due to the lack of need in government and research. The decline of books issued did not continue. By the third year of the war the number of books issued increased to 43,000 and in the fourth year 50,000 books were issued (Filon, 1977). Even though book usage fluctuated during the war, the National Central Library provided services to any person that needed library materials.

The British Museum Library offered various services during the Second World War. Factors influenced the services provided by the British Museum Library. Similar to the National Central Library, some of the staff members of the British Museum Library were called to serve in the military (Harris, 1998). This greatly diminished the number of staff of the library but it did not shut down the daily operations. Accessioning and cataloging continued to occur throughout the war not only in London but in the locations where materials were stored (Harris, 1998).

The greatest factor that limited library services was the bombing of the city. On September 3, 1939 the Reading Room was closed because most of the staff were occupied with evacuating the collection. Even though the Reading Room was closed, certain readers were allowed to use the materials if the research was classified as urgent public importance. The Reading Room fully opened on September 18 but limited to daylight hours due to the blackout conditions of the city (Harris, 1998).

In 1940, limited special exhibits were opened to the public after the endorsement of Standing Commission on Museums and Galleries. After bombing of the building occurred in the autumn of 1940, the exhibits and some of the departments of the library were closed for the duration of the war. The damage to the areas around the Reading Room in late 1940 required it to be closed during repairs. The readers could still access the materials because the library opened the North Library for readers to use as a Reading Room (Harris, 1998).

*R3: What are the strategies St. Paul's Cathedral Library used to protect the library collection during World War II and what, if any, damages occurred to the collection?*

The library at St. Paul's Cathedral, and the Cathedral itself, took measures to protect the building and collections from damage (Matthews, 1946). The Library's main measure of protection of materials was evacuation. In 1939, most of the collection of the Library was evacuated and moved to the National Library of Wales for safekeeping (Wisdom, 2011). Items that were too large to be evacuated were either moved to the Crypt or covered. One measure



of protection implemented by the Cathedral was the designation of watch guards (Matthews, 1946). In case a problem arose with the condition of the Crypt, a watch guard was placed in the Crypt each night to sleep (Matthews, 1946). Other watch guards were in place around the Cathedral to determine if problems arose with the building.

Damage did occur to St. Paul's Cathedral during the German bombing raids but most damage occurred on December 29, 1940 (Gaskin, 2006). The first bomb of that night penetrated the roof and fell in a library aisle. Fortunately the small fire was extinguished quickly and no damage occurred to any materials (Matthews, 1946). Unfortunately the damage to St. Paul's and the surrounding areas was not over. Bombs continued to fall on and around the area of St. Paul's. The bombing was so heavy, Prime Minister Winston Churchill communicated with the watch guard in the area that "St. Paul's must be saved at all costs" (Gaskin, 2006).

The watch guards were stretched thin across London that night but the volunteers continued to demonstrate resiliency and protected St. Paul's Cathedral and its library (Matthews, 1946). Miraculously St. Paul's Cathedral escaped major damage that night and by the morning the famous photo was taken of St. Paul's amidst the smoke of burning buildings (Gaskin, 2006). The collection of the St. Paul's Cathedral Library also escaped the damage of that night and survived the war undamaged (Matthews, 1946).

*R4: What services did St. Paul's Cathedral Library provide to users during this time?*

User services at the St. Paul's Cathedral Library were nonexistent during the Second World War (Wisdom, 2011). No services were available at the Library because the entire collection was moved to the National Library of Wales (Matthews, 1946). Even though the evacuation of the library collection did not allow for any services to be provided, it saved the collection from any damage during the war.

*R5: How did the National Library of Wales assist both the British Library and St. Paul's Cathedral Library during World War II?*

The National Library of Wales was an evacuation haven for libraries during the First World War and it would become an evacuation haven for more libraries during the Second World War. Tensions in Europe started to rise in 1933, which prompted the National Library of Wales to develop a plan to store materials in case of war (Jenkins, 2002). Sir Evan D. Jones proposed that the materials be kept in a more secure location and suggested using a quarry that was located on library grounds. The idea was rapidly accepted and plans to build a tunnel from the main building to the quarry were developed. The building of the tunnel was expedited by the British Museum Library joining in on the expense of the project (Jenkins, 2002).

As tensions increased in Europe, more libraries and museums in the country moved irreplaceable materials to the National Library of Wales for storage. The only problem that arose from the influx of materials was the shortage of staff at the Library. To overcome the shortage of staff, the Library asked for assistance from the staff of the evacuated libraries (Jenkins, 2002). This proved to be helpful because librarians and archivists from these libraries relocated to the National Library of Wales to assist in the handling and preservation of these materials. The National Library of Wales continued to receive materials from various libraries in the United Kingdom throughout the war (Jenkins, 2002). Eventually the Second World War ended and the materials evacuated to the National Library of Wales were returned to the proper libraries. The evacuation and storage of materials by the Library preserved and saved many irreplaceable materials from destruction.

## **Conclusion**

The preservation of library materials during the Second World War was very important to the cultural stability of the United Kingdom. The British Library and St. Paul's Cathedral Library both took measures to preserve the most precious materials in the respective collections. Both libraries evacuated the precious materials in the collections to the National Library of Wales for storage in a quarry. This proved to be a valuable collaboration since severe damage occurred to many materials associated with the British Library. The fortunate

occurrence was that the materials damaged had duplicate copies available elsewhere in the collection.

The study demonstrates how important library collaboration is in preserving library collections during conflict. If it were not for the National Library of Wales or other libraries storing materials, irreplaceable resources could have been lost or destroyed in the Second World War.

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Modern View of St. Paul's Cathedral  
(photo by T.S. Welsh, 2012)

# Academic and Public Libraries' Use of Web 2.0 Applications and Services in Mississippi

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## Introduction

Since its creation by Tim Berners-Lee in 1989, the World Wide Web has provided access to information to hundreds of millions around the world. Sodt and Summey (2009) describe Web 2.0 as a "second generation" term to describe the "user-driven, collaborative, participatory, and personalized web" (p. 98). Since these kinds of interactive experiences can attract users to libraries, libraries often feel encouraged to become familiar with Web 2.0 technologies (Dye, 2007). Libraries that have adopted Web 2.0 features are often described as having "Library 2.0" capabilities (Casey & Savastinuk, 2006). Libraries offer options for home users like virtual reference services, databases, catalog tagging, and downloadable media (Maness, 2006). Ranganathan's Law of Library Science (1931) states that the library should be considered a growing organism (Noruzi, 2004) and therefore the implementation of Web 2.0 technologies can be seen as a natural transition from print-based libraries into their more evolved virtual counterparts.

Libraries have guidelines and standards that hold them accountable to be effective institutions (Husid, 2010). The American Library Association's (ALA) "Library Bill of Rights" sets six basic standards for all libraries to follow. Among other things, these standards encourage libraries to resist forms of censorship, grant access to all types of materials, and resist biases (ALA, 2007). However, as libraries have evolved, so have many of these guidelines and standards with respect to technology specifically. For example, the American Association of School Libraries (AASL) *Standards for the 21<sup>st</sup> Century Learner* requires that the students in today's classroom strive to master technology skills (ALA, 2007). The Young Adult Library Services Association's (YALSA) *Public Library Evaluation Tool* and *The Competencies for Librarians Serving Youth: Young*

*Adults Deserve the Best* supports the use of social networking and Web 2.0 services like blogs and podcasts in the classroom and library (Husid, 2010). The Association of College and Research Libraries (ACRL) *Standards for Libraries in Higher Education* not only encourages academic libraries to educate students and build a sense of campus community, their principal performance indicator "Discovery" asks libraries to "enable users to discover information in all formats through effective use of technology and organization of knowledge" (ALA, 2011, pg. 9).

At state level, the Mississippi Library Commission's (MLC) supports the Library Services and Technology Act (LSTA), a federally funded act that allows the MLC to offer statewide programs and services such as Learn a Test, MAGNOLIA databases, and classes for employee technology development (MLC, 2011). MLC's 2014 publication *The Packet* shows continuing support of technology in Mississippi; one example, the Teen Zone at the Waynesboro-Wayne County Library, strives to be a hub for gaming and offers a PlayStation, Xbox, and Wii systems (MLC, 2014). The Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) is the accreditation commission for higher education institutions in the Southern States. Their mission is to "assure the educational quality and improve the effectiveness of its member institutions" (SACSCOC, 2012, p.1). The Core Requirement 2.9 requires the libraries of an accredited institution to provide services, user privileges, and resources to equip users with sufficient educational support (SACSCOC, 2012).

Arguably, as standards of practice and standards of service evolve, so should libraries and library services. Employing Web 2.0 capabilities in library services are an important part of meeting user needs in the new century. To what extent libraries in Mississippi have heeded the call has yet to be measured, however.

## Purpose of Study

This purpose of this study was to determine, by surveying library Web sites, the extent to which Mississippi's academic and public libraries meet

current technological standards and other recommendations set by professional organizations.

### *Research Questions*

R1. What types of Web 2.0 services (mash-ups, blogs, wikis, phone app, QR code, etc.) are available on Mississippi public and academic library systems' Web sites?

R2. Which are the most frequently offered Web 2.0 services overall? Do these differ between library types?

R3. What types of social networking (Twitter, Facebook, YouTube channel, Pinterest, Instagram, etc.) are utilized by Mississippi public and academic library systems' Web sites?

R4. Which are the most frequently used social networking applications overall? Do these differ between library types?

R5. What types of social tagging are available on Mississippi public and academic library systems Web sites?

R6. Which types of social tagging are the most frequently used overall? Do these differ between library types?

R7. Which library Web site participates in responsive design formats? (That is, the ability to adapt to three different platforms: mobile phone, tablet, and computer.)

### *Definitions*

Mash-up - is a Web applications that combines services into a single application with an easy use interface (Techterms, 2007).

Quick response code (QR Code) - this is a two dimensional code that is scanned with mobile technology to locate data on the Web, in SMS text, or make payments (*PC Magazine Encyclopedia*, 2014).

Responsive Web design – is a site's ability to adapt to different viewing platforms: mobile phone, tablet, and computer (Techterms, 2013).

### *Importance of Study*

Study findings aim to measure to what extent Mississippi's libraries are meeting current service standards. Findings will suggest that libraries in Mississippi, generally, are meeting current standards, not meeting them, or perhaps even surpassing them. Findings can inform recommendations for changes in policies or service models.

### **Literature Review**

The literature about Web 2.0 and Library 2.0 is already extensive. Although the term "Library 2.0" is still vague to some librarians, Kwanya, Sitwell, and Underwood (2009) believe that how libraries respond to it will be important for their survival. Anttiroiko and Savolainen (2011) distinguish the two and suggest that "Web 2.0" is a general term for all new user-centered technologies while "Library 2.0" is a general term for all libraries that use the Web 2.0 services. Their work identifies four main uses of Web 2.0 in public libraries: communication, content sharing, social networking, and crowdsourcing.

Already some studies have examined libraries and Library 2.0 capabilities. For instance, Boateng and Lui (2014) examined how many of the US News and World Report's 2013 top 100 colleges in the USA used Web 2.0 services. They searched the school's main Web page, search function, public blog platforms, and social networking sites (SNS). Each school had data being recorded on how they used Web 2.0, trends, and level of participation. Findings indicated that 90 percent or more of the universities' libraries used social networking sites, blogs, RSS feeds and messaging, and 100 percent of them used SNS, while less than 40 percent used wikis and social bookmarking features. Mahmood and Richardson (2011) completed a study of Web 2.0 technologies and members of the Association of Research Libraries (ARL). The study found that all member libraries were using at least one Web 2.0 tool. Then, after separating tools into groups by usage, the study found that while blogs, RSS feeds, messaging, social media sites, and podcasts had a high rate of use among the libraries examined, wikis, photo apps, and virtual worlds had a lower rate of use.

### *International Studies of Libraries and Web 2.0*

The use of 2.0 technologies in libraries is a topic of worldwide interest. For instance, Mirza and Mahmood (2009) examined Web-based services at university libraries in Pakistan. Findings showed that Web-based services are still in the development stages with only two-thirds of libraries examined in the study maintaining at least partial Web sites. Half of the libraries were considered "dynamic" (a Web



site with hyperlinks). Available library services were limited to five or six features, with one or more resources for instruction services, reference services, email, and chat applications. A more recent study by Khan and Bhatti (2012) surveyed attitudes about the use of social media as a marketing tool at universities in Pakistan. The study found that librarians and academics thought the library's use of social media would be an accepted and positive marketing technique. Khan and Bhatti (2012) did suggest, however, that proper training would be needed for this to be an effective tool, something that Ata-Ur-Rehman and Shafique's (2008) study had found four years earlier.

Linh's (2008) study examined the actual use of Web 2.0 at Australasian university libraries and considered, specifically, the type, purpose, and features of each technology used. Linh found that two-thirds of the universities in the study used one or more Web 2.0 resources. Only four libraries in the study used these technologies for a specific and basic purpose. Linh (2008) also indicated that the most popular 2.0 applications used among the Australasian university libraries in the sample were blogs, wikis, RSS, messaging, social networking, and social tagging. Si, Shi, and Chen (2011) conducted a similar study of Chinese university libraries, completing a content analysis of the Web sites of the country's top 30 universities. The results showed a low number of libraries using Web 2.0 services adequately. Two-third of the libraries studied used between one and four Web 2.0 technologies. A similar but older survey conducted by Han and Liu (2010) had yielded nearly identical findings.

#### *Web Analysis of Library Web Sites*

Brower's (2004) study of academic health science library Web sites focused specifically on homepages and navigation tools. Forty-one libraries were examined for evidence of Web site aides, library services, and electronic services. Each site was frozen and downloaded with a Web spider so the site could not be changed. Brower concluded that 85 percent of the library Web sites offered some form of navigation tools. Common aides and tools included: feedback forms, site indices, site maps, and search engines. General library information was not apparent outside of education services, hours of operation, and library

news. The study's conclusions suggest that a Web site should contain 50 percent more persistent navigation tools compared to homepage links. This 50 percent increase in navigation tools would allow certain information to be available on every page in the areas of navigation, location to homepage, contact information and identification of current page.

Pechnikov and Nwohiri (2012) used webometrics to study Nigerian university Web sites. Using a crawler, the researchers scanned the Web sites and hyperlink pages to create a database of hyperlinks. Around 9500 outlinks were found from 102,000 pages from the 97 universities used for the study. A Web neighborhood was found with 138 sites linked but only 127 were active. Fifty-three out of the 127 Web sites did not have a Web neighborhood. The results showed the Nigerian university Web structure to be small and weakly connected.

Many studies examine library Web sites from a usability perspective. For instance, Black (2009) completed a two-year study on the academic library Web site user using the Ohio State University Libraries Web site. Study findings suggested that Web designers should consider site design from the user's perspective: site maps, for example, not only optimize usability but can also increase site usage. Moreover, analysis of visited pages can help measure the popularity of Web content. Another study by Smith (2014) examined accessibility, complexity, readability, and types of links available on selected public and private library Web sites in Alabama, using criteria selected from the Web Accessibility Initiative, the Web Content Accessibility Guidelines 2.0, and the World Wide Web Consortium. The results showed that the selected sites showed completeness (according to the criteria) and ranked close together in terms of overall accessibility. The study concluded, however, that the overall readability of the sites examined needed improvement.

Last, Qutab and Mahmood's (2009) completed a content analysis of all 52 library Web sites in Pakistan. Using a list of 77 criteria, the researchers sought to identify navigational strengths and weakness, specifically. Findings suggested that, while none of the 52 library Web sites examined lived up to

all 77 criteria, ultimately library type was not a factor in determining overall navigability. The study also found very little evidence of Web 2.0 features on these sites. The present study will use a similar research design and methodology as Qutab and Mahmood's (2009) study, examining the Web sites of academic and public libraries in the state of Mississippi.

## **Methodology**

This study employed a content analysis approach, using a checklist of Web 2.0 features (see Appendix A) compiled using information from Maness (2006) and Mahmood and Richard Jr. (2011).

Not all public and academic libraries were used in this study. Libraries included in the study had to have a working Web site. Moreover, academic libraries of various sizes and levels were included in the sample but had to be part of accredited institution of higher learning to be properly considered an academic library. A list of 78 different library Web sites was compiled using a list (obtained from the Southern Association of Colleges and Schools Commission on Colleges) of accredited academic libraries in Mississippi. This list was then cross-referenced with a similar list obtained from the Mississippi Library Commission (MLC) and ultimately 30 academic library systems in Mississippi were included in the final sample. A list of Mississippi public library systems from the MLC was used to identify public libraries with working Web sites.

Data about what each site contained were recorded and entered in a spreadsheet, delineated by library type. Each site was examined for evidence of Web 2.0 features, including (but not limited to): blogs, wikis, phone apps, QR code, mash-ups, video or audio sharing, and customized Web pages; social media/networking (e.g., Twitter, Facebook, YouTube channel, Pinterest, Instagram, and so forth); and types of social tagging. In order for the 2.0 feature to be counted, it had to be publicly available (i.e., accessible without the use of a password or use of a system library card). All Web pages were active at the time of data collection and most data were collected from the homepage, except for catalog data and any

resources identified to be on a separate page (e.g., phone app links).

Each Web site was also tested for "responsive design"—that is, the ability to adapt to mobile phone, tablet, and computer platforms. To achieve this end, each library Web site in the sample was accessed on three devices (phone, tablet, and computer).

All library Web sites included in the sample were examined in the fall of 2014. Results were analyzed using a descriptive statistical approach.

## *Assumptions*

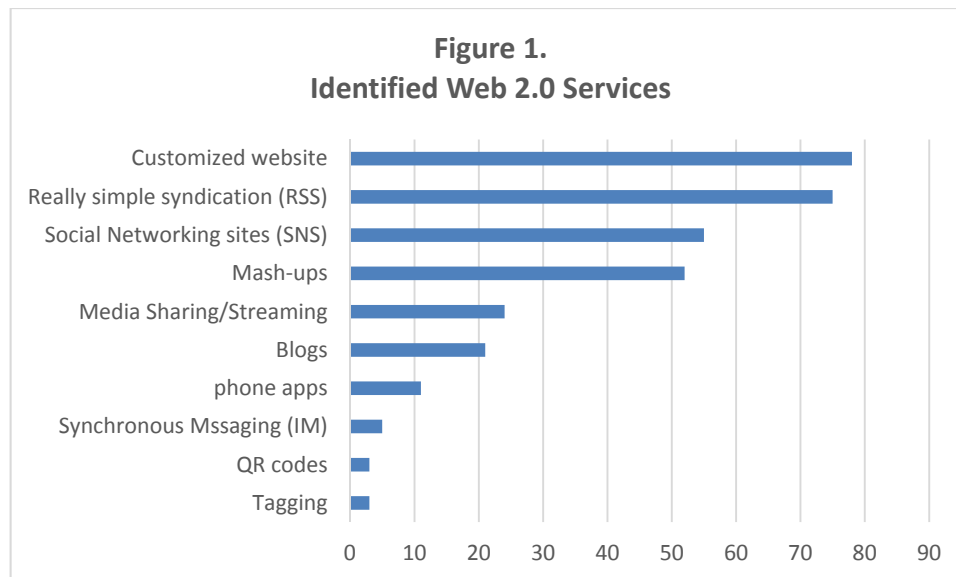
For the purpose of this study, it was assumed that the list of library systems indexed on the MLC's Web site is correct and complete, and that the accompanying information on each library (such as name, Web site, type of library, and location) was accurate at the time of the study.

## *Limitations*

The Web sites included in the study were limited to academic and public libraries located in Mississippi. Moreover, all public library Web sites had to be available through the Mississippi Library Commission, and the parent institutions of the academic library Web sites had to be members of the Southern Association of Colleges and Schools Commission on Colleges. The geographic limitations were chosen for two reasons: first, to make the study feasible (it was completed as a capstone research project by an MLIS Candidate); and second, so that the study could act as a "pilot" for any future studies of broader (i.e., regional or national) scope.

Therefore, although the present study aims to be broad in terms of its examination of library Web sites in Mississippi, its findings cannot be generalized to regional or national levels. Its findings tell us only about the availability of Web 2.0 features on the Web sites of selected libraries in Mississippi.

Moreover, while each library site examined was indeed the "official" Web site of the library in question, there was, understandably, variability in the ownership and maintenance of each library's site.



Not every library included in the sample had its own, standalone site; in some cases, library sites were a part of the larger library system of which the selected library was a part (for example, a county library system of multiple branches). In such cases, the Web site of the larger library system was examined.

## Findings

*R1. What types of Web 2.0 services (mash-ups, blogs, wikis, phone app, QR code, etc.) are available on Mississippi public and academic library systems' Web sites?*

Figure 1 summarizes by type and frequency the Web 2.0 services and features found in academic and public libraries in Mississippi. The following sections will consider each on its own.

### Customizable Website

Custom user interface is one of the four essential elements of Library 2.0 (Maness, 2006). This interface is what the user will use to interact in the virtual community of the library's site. Depending on site design, the user can share and save, creating a more personal experience by signing into their account. All 78 Web sites were found to be customizable by signing in to access personal settings. This allows a more in-depth search of the catalog, access to the databases, and so forth.

### Real Simple Syndication (RSS)

RSS is the second most frequently adopted Web 2.0 feature. RSS is an XML code that will give users the availability to personalize information on the Web

site (Walia & Gupta, 2012). Nearly all (75 out of 78) of the Web sites in the sample featured an RSS application. Updateable newsletters, calendars, and blog feeds were all found on one or more of the sites. The most common RSS application was used for book updates, whereby libraries posted book covers or summaries of the newly added titles.

### Social Networking Sites

Social networking sites (SNS) is a broad term that covers a network of applications. SNS offer a free way to create a personalized Web page within an established online community. SNS sites like Facebook, Twitter, LinkedIn, and Pinterest provide the users with services like blogs, media sharing, tagging, and messaging (Maness, 2006). SNS were found to be the third common used Web 2.0 feature with 55 libraries having one or more account.

### Mash-up

"Mash-up services" describe the mixing of 2.0 technologies. Mahmood and Richard (2011) define it as an application that uses content from other Web 2.0 resources and offers the services in a single interface. Fifty-two sites in the sample showed evidence of mash-ups. The most common option was to offer virtual search of the OPAC on the home page or allow a Web search on the topic using a popular search engine. Several sites even offered book list resources with a "buy now" option through Amazon. Shelf Safari was also used to create virtual book lists for books newly added to the library collections.

### *Media Sharing and Streaming*

Twenty-four library Web sites featured some form of media sharing or streaming, the most common types being audio/video streaming and document sharing. Video streaming was most popular; libraries used it to create tutorials for database searching and to showcase library services. Eleven of the 24 libraries in the sample showed evidence of maintaining a YouTube account. Document sharing was also recorded on the sites. Many libraries had a prescribed area to find a downloadable handout to study and research helps. Several of the libraries linked to video streaming applications and movie on-demand databases.

### *Blogs*

Twenty-one libraries in the sample maintained at least one blog and promoted it on their Web site. Many of the blogs had RSS feeds directly tied to the homepage. Six of the libraries that maintained blogs were academic; the remaining 15 were public.

### *Wikis*

Wikis are collaborative programs used to create content for a Web site (Rouse, 2006) whereby users create and edit content using a simple interface. None of the libraries in the sample appeared to use wikis on their sites.

### *Mobile Applications*

Mobile applications can be used to offer mobile access to Web applications or be specifically designed for your mobile device (2013). Eleven out of seventy-eight of the evaluated libraries offered some form of mobile applications. Eight of those eleven were academic libraries in the study and three of the libraries were public. The applications were mostly phone applications to conduct catalog searches, database searches, or listing the resources the library offered.

### *Synchronous Messaging*

Synchronous messaging, or instant messaging (IM), “allows real time text communication between librarians and users” (Maness, 2006, pg. 2). Five libraries in the study offered an IM function on their

sites to allow users to communicate in real time with librarians. Four of these were academic libraries. Most of the remaining libraries in the sample offered only email communication for reference questions or other queries.

### *Quick Response Code*

Quick response code (or, QR code) is a two-dimensional barcode used to share information in a digital format. They can be scanned by a smartphone with mobile tagging application installed (PC Mag, 2014). Only three libraries in the sample showed evidence of using QR codes to connect users to news, phone apps, and promotional activities.

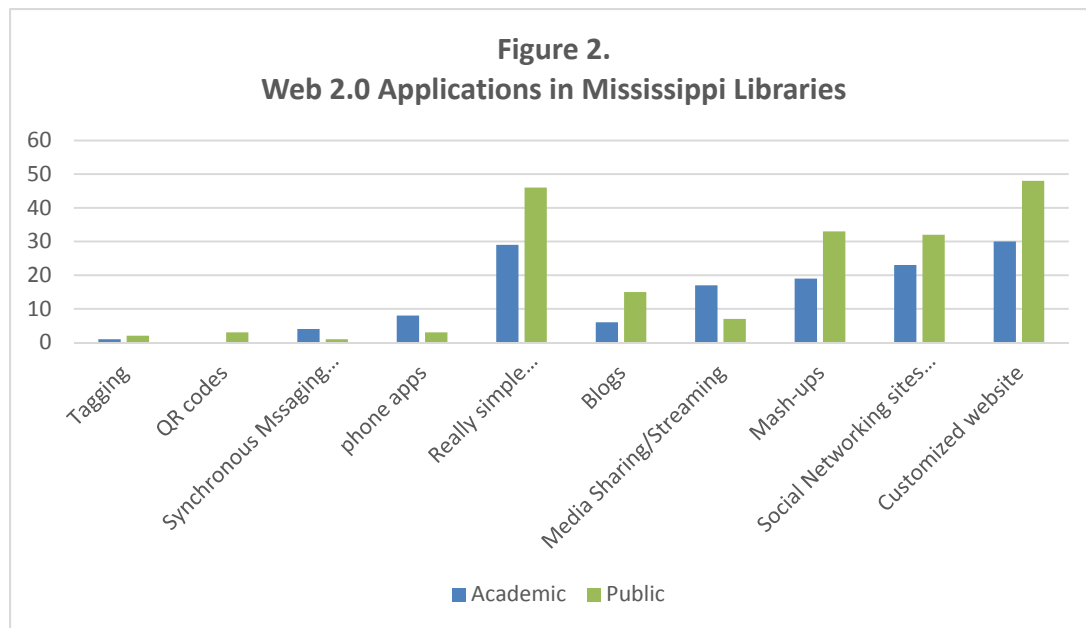
### *Tagging*

Tagging is a web-based tool that allows users to create headings (using names and keywords) and attach them to items. Maness (2006) suggests that tagging is the user’s ability to add and change not only data but metadata as well. Tagging, or social bookmarking specifically, are “excellent resource discovery tools” according to Waila and Gutpa (2012, pg.10). When combined, tags create a list of searchable resources. Only 3 libraries in the sample showed evidence of tagging.

### *R2. Which are the most frequently offered Web 2.0 services overall? Do these differ between library types?*

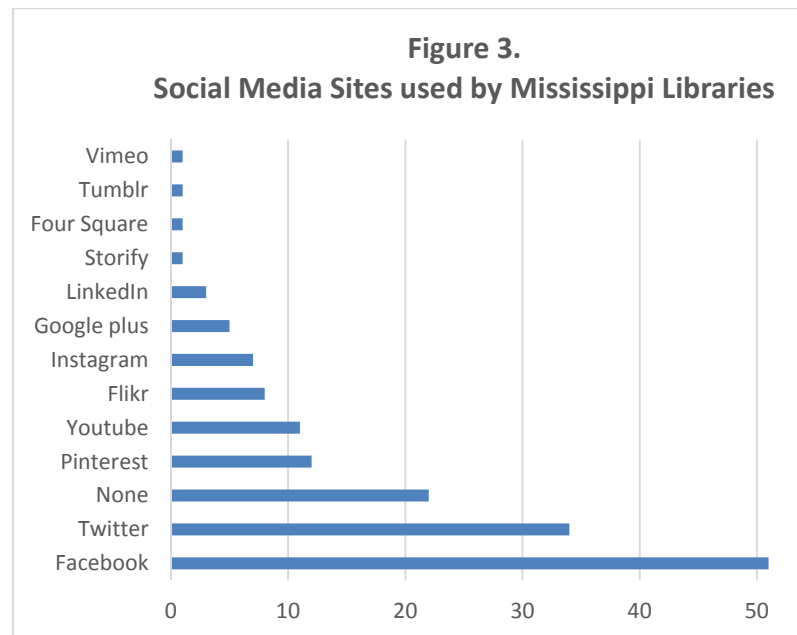
As depicted in Figure 2, the data showed that the two most frequent types of Web 2.0 features were RSS and Customized Web sites. This was the case for the entire sample, and also individually per library type. All 78 libraries make use of the Customized Website resources; for example, each page requested that the user log into their account to access a more personalized library site. RSS was found on 75 of the 78 library sites; libraries normally used RSS to promote monthly calendars, blog posts, new books, and so forth. Twenty-nine of the 30 academic libraries in the sample and 46 of the 48 public libraries used RSS. So, there was no reason to conclude that RSS was more popular among libraries of one type over the other.



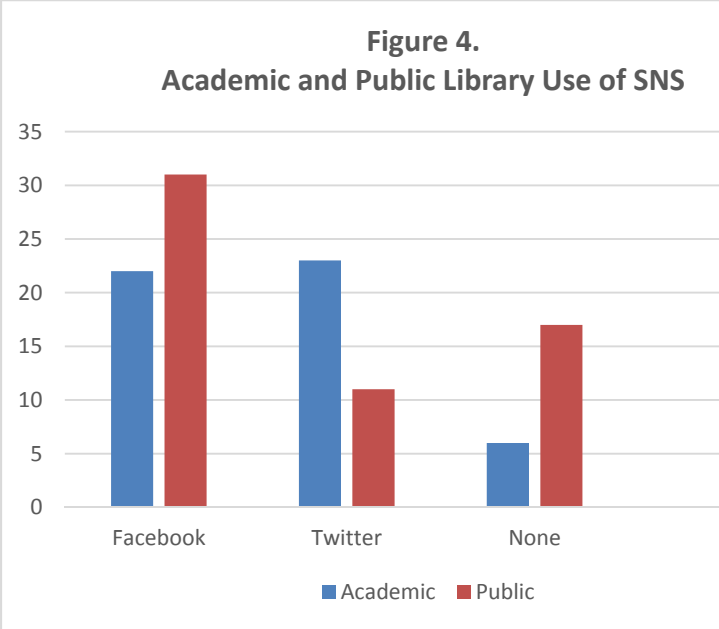


*R3. What types of social networking (Twitter, Facebook, YouTube channel, Pinterest, Instagram, etc.) are utilized by Mississippi public and academic library systems' Web sites?*

Aside from customization and RSS feeds, social networking sites (SNS) were the most commonly used 2.0 feature in the sample. SNS are perhaps the best examples of 2.0 functionality: they allow for messaging, blogging, streaming media, tagging, and Web site customization. All sites in the sample were checked for icons ("buttons") or links leading to social media applications such as Facebook, Twitter, and so forth. Most buttons could be found on the library's homepage or on a media tab. Figure 3 shows that 51 library Web sites had links to social media applications: 32 public libraries and 23 academic libraries showing links to at least one social media application or site associated with the library.



R4. Which are the most frequently used social networking applications overall? Do these differ between library types?



Rouse and Dean (2014) identifies five features that libraries can use these features to connect, educate, and promote themselves: marketplace, groups, events, pages, and presence technology. Of the 78 library Web sites examined, 24 of them did not identify the use of a social networking site. Six of the academic library sites showed no evidence of SNS promotion, and 17 public library sites showed no evidence of SNS promotion. Facebook was by far the most frequently used form of social media among the libraries in the sample: fifty-one Web sites featured links to a Facebook account (22 academic libraries and 31 public libraries). Twitter was the second most frequently used form of social media, with 34 libraries showed evidence of using the application.

While many libraries showed evidence of using two or more social media applications, identified two or more accounts in social media sites, a much larger number of academic libraries in the sample have social media accounts than the public libraries in the sample (see Figure 4).

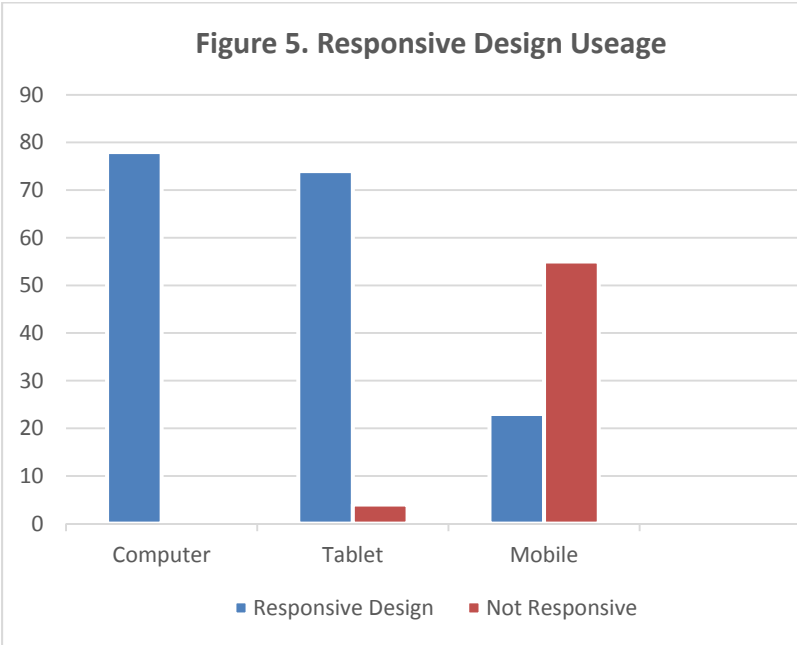
R5. What types of social tagging are available on Mississippi public and academic library Web sites? Tagging was found in two forms: social bookmarking, and catalog tagging. Two of the Web sites in the

sample showed evidence of social tagging while only one showed any visible catalog.

R6. Which types of social tagging are the most frequently used overall? Do these differ between library types?

Social bookmarking was the most used form of tagging among sites in the sample. Two public libraries offered the option of tagging the library in social bookmarking applications. One academic library in the sample was a member of Open Library, which gave all users the ability to add tags to books, videos, and other forms of media to use as a search option. While most forms of SNS offer tagging through hash tags or naming, these three sites were the only sites in the sample to offer (in the open parts of their Web pages) social tagging independently of social media sites.

R7. Which library Web site participates in responsive design formats?



All Web sites in the sample were accessed three ways: by computer, tablet, and mobile phone. Figure 5 shows the results of this test. None of the sites in the sample required additional programs to open in a Web browser.

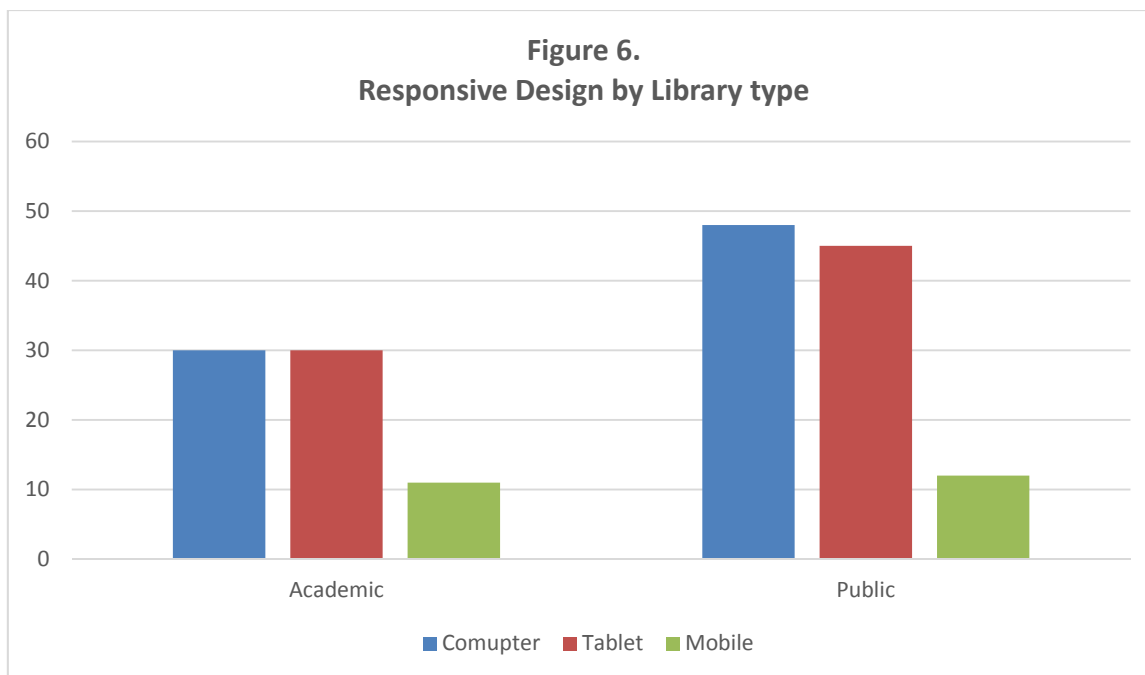


Figure 6 shows the results of the responsive design test by library type. All academic library sites could be used and were easy to read on a tablet. However, 19 of these sites did not show a great deal of usability when accessed on a mobile phone, and required zooming to read and use. Three public library sites did not show reasonable additivity to the tablet platform. One of these sites required the download of additional applications for viewing on a mobile device.

### Discussion and Conclusions

Recent surveys on the use of Web 2.0 technologies on library sites are being supported by associations that create and maintain guidelines and standards for the use of such applications on library Web sites. While some libraries choose to “wait and see”, and thus adopt Web 2.0 rather slowly or even reluctantly, it is clear that “Library 2.0” is no a passing fad. Libraries are using these applications and features to do what they have always done, but in newer ways: meeting users’ needs. As such, this growth is not just technological but also service-based, and is becoming invaluable to libraries with users that live at a great geographic distance from the library itself.

The summative findings of this study are twofold: First, if the patterns shown in the study are of any indication, it is clear that Mississippi libraries are embracing Web 2.0. Many of these technologies and

applications are free, require little training to use, and are becoming integral aspects to these libraries’ online presence. Second, however, is the finding that libraries’ adoption of 2.0 technologies and applications are not uniform between libraries of each type, or even among libraries of the same type. Such patterns can be easily explained by differences in funding, differences in size of library, and also differences in available related resources (i.e., staffing, training) required. It can also likely be explained by the fundamental differences between library types (academic versus public) and their users’ informational needs. For such reasons, these patterns will likely always persist, as no two libraries can ever be the same or carry out their missions the same way.

Further research could be conducted on the use of Web 2.0 on Mississippi library Web sites, especially among special and school libraries, which would help give an even broader picture of Web 2.0’s adoption overall. Another possible study would be to examine academic libraries in Mississippi (or any state) that use Web 2.0 and the success of online and distance-learning students at those schools. In any event, it is hoped that, by showing our progress to date, this study’s findings will encourage the further adoption of Web 2.0 in the state’s overall library program as well as further discussion about new and innovative ways of reaching our users.

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## Appendix A

### Web 2.0 Checklist

Name: \_\_\_\_\_

Type of Library: \_\_\_\_\_ Date Reviewed \_\_\_\_\_

Web site design		Observation	Notes
	Customized Website		
	Responsive Design		
<b>Services</b>			
	RSS	Type:	Use:
	SNS	Type:	Use:
	Mash-up	Type:	Use:
	Media Sharing and Streaming	Type:	Use:
	Blogs	Type:	Use:
	Wikis	Type:	Use:
	Mobile Applications	Type:	Use:
	Synchronous Messaging	Type:	Use:
	Quick Response Code	Type:	Use:
	Tagging	Type:	Use:
	Other:	Type:	Use:

# “Information Theory” Research Trend: A Bibliometric Approach

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## Introduction

One of the most controversial issues, in a multidisciplinary area, is *information theory*. *The American Heritage Science Dictionary* (2014) defines information theory as “a branch of mathematics that mathematically defines and analyzes the concept of information, statistics and probability theory, and applications include the design of systems that have to do with data transmission, encryption, compression, and information processing and deeply affected many fields.” It has a fundamental contribution to make in multiple disciplines, such as mathematics, statistics, computer science, physics, neurobiology, communication theory, information science, economics, and electrical engineering. Indeed, information theory played a crucial role to achieve many pertinent scientific missions and inventions such as Voyager, Mobile phone, and Internet.

Shannon's 1948 paper, "A Mathematical Theory of Communication," in the *Bell System Technical Journal* is considered by many scholars to be the founding document of information theory. In this paper, he introduced a qualitative and quantitative model of communication as a statistical process underlying information theory (Shannon, 1948; Shannon & Weaver, 1949).

A large body of research has been published in different formats (e.g. journal, book, proceeding papers, letter, meeting abstract, etc.) in the field of information theory. Given this, identifying and measuring the effect and value of scientific outputs, such as the field of information theory, plays an important role in today's world of information overload. Bibliometric studies carried out in recent years “have provided an accurate and objective method to measure the contribution of the paper to the advancement of knowledge” and the *Web of Science* database is “the most widely accepted and

frequently used database for analysis of scientific publications” (Wen & Huang, 2012).

## Purpose of the Study

The purpose of this study is to carry out a bibliometric analysis and examine scientific collaborations in information theory articles gathered from the Thomson Reuters *Web of Science* (WoS) database. Therefore, this study focuses on the following objectives:

- 1) number of publications in the field of information theory and growth rate;
- 2) type of documents and languages used by researchers;
- 3) periodicals that published the most articles in this field of study;
- 4) countries that produced the greatest number of publications;
- 5) universities and institutions with the greatest number of publications;
- 6) the most productive and effective authors in this field of study;
- 7) average page count per article and average cited reference count per article;
- 8) most cited articles of information theory;
- 9) authorship and collaboration patterns in this field of study;
- 10) the type of collaboration between scholars in this field (institution, inter-institution, international);
- and 11) most common subject categories and keywords.

## Methods

This research was done with a bibliometric approach. This study was limited to Thomson Reuters *Web of Science* (WoS) database using the following search strategy: TS=“information theory”. TS tag searches title, abstract, and keyword fields. Document information included name of author, author address (affiliation), title, year of publication, keywords, name of journal, and number of cited references. In total, 9,243 items were retrieved and duplicate records were excluded. Overall, 8,466 records were gathered and analyzed using Microsoft Excel software. Additional coding was manually performed based on the research objectives

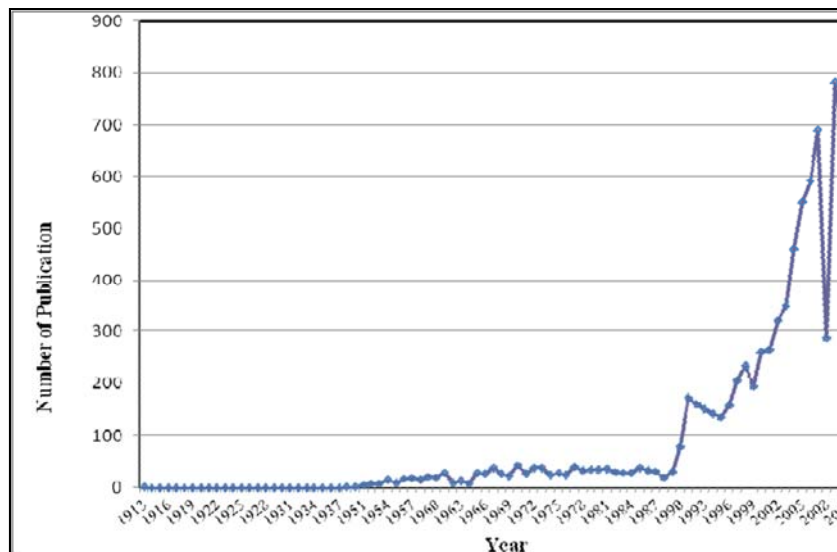


Figure1. Publications on Information Theory, 1913-2011

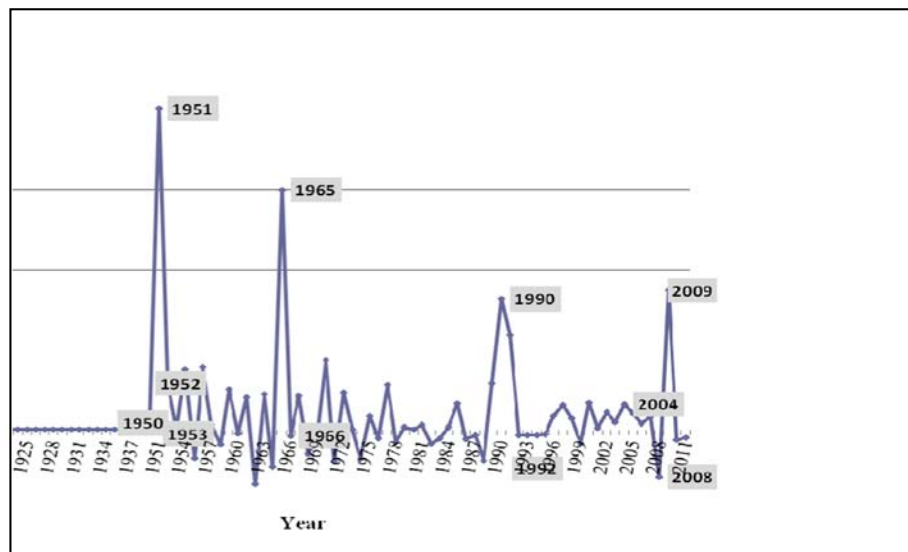


Figure 2. Growth Rate of Publications on Information Theory, 1913-2011

## Results

### Number of Publications and Growth Rate

Data showed that 8,466 items were published by researchers in sources covered by *Web of Science* (WoS) in the area of information theory.

Figure 1 indicates that the number of scientific publications in the field of information theory over the period from 1913 to 2007 increased. Despite an overall increase, there was a decrease in 2008, a sharp rise in 2009, and during 2010- 2011 bottomed out slightly.

In order to calculate trend of growth rate of publications in information theory, the following formula was used:

$$PR = \frac{V_{\text{present}} - V_{\text{past}}}{V_{\text{past}}} \times 100$$

Where PR is Percent Rate,  $V_{\text{present}}$  is present or future value and  $V_{\text{past}}$  is past value.

Figure 2 demonstrates the trend of growth rate of publications in information theory. As can be seen, there were fluctuations in the trend of scientific publications of information theory. In fact, there were three general trends. First, over the period from 1913 to 1950, the trend of outputs was stagnated. Secondly, in the years 1951, 1965, 1990, and 2009, there was an upward trend and in years 1952-53, 1966, 1992, 2008, and 2010-11, there was a downward trend. Finally, during 1954-1964, 1967-



1988, and 1993-2007 growth rate of outputs was uneven and did not exhibit a clear pattern.

In order to calculate the average annual growth rate of works during 89 years, the geometric mean is used. Results showed that this rate was 7.5 percent and as mentioned, breaks in the growth of publications in some years it occurred.

### Types of Documents and Languages

The results of the analysis of the type of documents showed indicated that the documents were in eleven different formats including articles, proceedings, book reviews, correction, discussion, editorial material, letter, meeting abstract, news item, note, and reprint. As expected, the most frequent format was articles (60.10%), followed by proceedings (33.09%), book review (2%), and meeting abstracts (1.45%) (Table 1).

Scientific publications in the field of information theory were published in 16 languages. English documents ranked top (97.52%) followed by German (1.07%), and French (0.50%) respectively (Table 2).

Table 1. Document Type and Percentage

Article	60.10%
Proceedings Paper	33.09%
Book Review	2.00%
Meeting Abstract	1.45%
Editorial	1.39%
Letter	0.93%

Table 2. Language and Percentage

English	97.52%
German	1.07%
French	0.50%
Russian	0.35%
Czech	0.12%
Spanish	0.11%
Japanese	0.08%
Hungarian	0.06%
Italian	0.05%
Chinese	0.04%
Rumanian	0.04%
Portuguese	0.02%
Dutch	0.01%
Korean	0.01%
Polish	0.01%

Slovak	0.01%
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### Periodicals that Published the Most Articles

The items in this study were published in 3,424 journals and conference proceedings. *IEEE Transactions on Information Theory* published the most documents (3.59%) followed by *Physical Review A: Atomic, Molecular and Optical Physics* (2.01%), *Physica A: Statistical Mechanics and Its Applications* (1.32%), and *Physical Review E: Statistical, Nonlinear and Soft Matter Physics* (1.24%). Table 3 shows top ten journals and proceedings that published in the field of information theory.

Table 3. Publication Title and Percentage

1	<i>IEEE Transactions on Information Theory</i>	3.59%
2	<i>Physical Review A</i>	2.01%
3	<i>Physica A</i>	1.32%
4	<i>Physical Review E</i>	1.24%
5	<i>Electronics Letters</i>	1.13%
6	<i>Physics Letters A</i>	0.78%
7	<i>Entropy</i>	0.76%
8	<i>Physical Review Letters</i>	0.67%
9	<i>Proceedings of the US National Academy of Sciences</i>	0.53%
10	<i>Journal of Theoretical Biology</i>	0.52%

### Countries that Produced the Greatest Percentage of Publications

Researchers of the 91 Countries had impressive contribution to this field of study. Among them, countries of USA, UK, Peoples Republic China, Canada, Germany, Japan, Spain, France, Italy, and Australia respectively, were top ten countries that published the highest number of publications during in this period in field of information theory (Table 4).

Table 4. Publications by Country

1	USA	46.92%
2	UK	8.08%
3	Peoples R China	7.36%
4	Canada	5.53%
5	Germany	5.00%
6	Japan	4.98%
7	Spain	4.55%
8	France	4.52%
9	Italy	3.71%
10	Australia	3.07%

### ***Publications by Universities and Institutions***

There were over 3,900 institutions and universities involved in research activity in the field of information theory. As can be seen in Table 5, MIT university, University of Illinois, National University La Plata, University of Waterloo, University of California, Berkeley, California Institute of Technology (CALTECH), University California, San Diego, Stanford University, Le Centre national de la recherche scientifique (CNRS), and Princeton University produced the most scientific documents in this field ranked 1-10, respectively.

Table 5. Publications by Institution

1	MIT University	8.81%
2	University of Illinois	1.04%
3	National University La Plata	0.94%
4	University of Waterloo	0.93%
5	University of California, Berkeley	0.90%
6	California Institute of Technology (CALTECH)	0.85%
7	University California, San Diego	0.83%
8	Stanford University	0.80%
9	Le Centre national de la recherche scientifique (CNRS)	0.77%
10	Princeton University	0.73%

### ***Most Productive Authors in Information Theory***

Table 6 illustrates the most productive and effective authors in the field of information theory. Findings indicated that of 8,466 documents were written by 13,590 authors. Plastino, Hayashi, Matsuda, Nalewajski, and Casas were the five most productive authors in the field of information theory; i.e. they authored the largest number of papers.

Table 6. Most Productive Authors

1	Plastino A	162
2	Hayashi Y	35
3	Nalewajski RF	34
4	Matsuda R	33
5	Casas M	28
6	Wallace R	28
7	Jumarie G	25
8	Schneider TD	25
9	Rogan PK	24
10	Szpankowski W	24

### ***Average Number of Pages and Cited References***

Characteristics of publications of information theory research (i.e. number of articles, average page count per article, and average reference count per article) in the study period 1913-2011 are summarized in Table 6. They are grouped in eight periods, including 1913, 1938, 1950-59, 1960-69, 1970-79, 1980-89, 1990-99, and 2000-11. From Table 7, it can be inferred that the number of article increased from 1 in 1913 to 5874 in 2000-2011.

The average article length and the average reference count per article increased slightly. Overall, the publications averaged 13.74 pages, 28.68 references, 16.83 times cited per article of information theory research in the study period 1913-2011.

Table 7. Publication Characteristics

Year	A	PG/A	RE/A
1913	1	8	1
1938	1	1	1
1950-1959	113	6.47	19.29
1960-1969	217	4.71	10.92
1970-1979	328	7.40	14.54
1980-1989	305	12.64	16.90
1990-1999	1627	10.24	23.97

2000-2011	5874	15.60	32.23
Total	8466	13.74	28.68

Note: A = Number of Articles; PG/A = Average Page Count; RE/A = Average Reference Count per Article

### Most Cited Articles of Information Theory

Number of citations to a publication illustrates the impact of its work in the field of science. To determine articles with greatest impact, articles were ranked based on times cited (Table 8). The times cited count indicates the number of times a published paper was cited by other papers and is a measure of the impact of a work in that field of science.

Table 8: Most Cited Articles

#	Article Title	Times cited
1	Turk, M., & Pentland, A. (1991). Eigenfaces for recognition. <i>J of Cognitive Neuroscience</i> .	3389
2	Jaynes, E. T. (1957). Information theory and statistical mechanics. <i>Physical Review</i> .	3267
3	Maes, F., et al (1997). Multimodality image registration by maximization of mutual information. <i>IEEE Transactions on Medical Imaging</i> .	1834
4	Douglass, J. K. et al (1993). Noise enhancement of information. <i>Nature</i> .	805
5	Biglieri, E., et al. (1998). Fading channels: Information-theoretic and communications aspects. <i>IEEE Transactions on Information Theory</i> .	783
6	Kramer, G. et al. (2005). Cooperative strategies and capacity theorems for relay networks. <i>IEEE Transactions on Information Theory</i> .	721
7	Anderson, D. R. et al. (2000). Null hypothesis testing: Problems, prevalence, and an alternative. <i>J of Wildlife Management</i> .	704

8	O'Neill, R. V. et al. (1988). Indices of landscape pattern. <i>Landscape Ecology</i> .	578
8	Koetter, R., & Medard, M. (2003). An algebraic approach to network coding. <i>IEEE-ACM Transactions on Networking</i> .	527
10	Simoncelli, E. P., & Olshausen, B. A. (2001). Natural image statistics and neural representation. <i>Annual Review of Neuroscience</i> .	511

Table 8 lists ten of the articles with greatest impact in information theory based on citation. We can see that Turk and Pentland (1991), Jaynes (1957), and Maes et al. (1997) have been cited 3389, 3267, and 1834 times in this period, respectively and therefore, are the most highly cited papers in the field of information theory.

### Authorship Patterns in Information Theory

For the purpose of determination of authorship patterns and degree of collaboration, the author field in *Web of Science (WoS)* database was searched and data were classified into three groups: one author, two authors, and three or more authors; 8,466 items about information theory were statistically analyzed in Table 9, including the percentage of outputs in eight periods. Results indicate that publications with one author during 1913-1989 were dominant and publications with two and three or more authors during 1990-2011 increased sharply.

By and large, 29.60 percent of authorship is related to one author, 30.38 percent of one is related to two authors, and 40.02 percent of one is related to three or more authors that made up writing patterns in field of information theory during 89 years.

Table 9. Number of Authors per Article

Year	One auth.	Two auth.	Three or more
1913	0.01%	0.00%	0.00%
1938	0.01%	0.00%	0.00%
1950-1959	1.23%	0.11%	0.00%
1960-1969	2.10%	0.34%	0.12%
1970-1979	2.60%	0.87%	0.40%

1980-1989	1.89%	0.90%	0.82%
1990-1999	6.47%	07.08%	5.67%
2000-2011	15.28%	21.08%	33.01%
Total	29.60%	30.38%	40.02%

In order to determine proportion of single and co-authored products in this field, first, works with two authors or more classified in a group named coauthored productions. In other words, outputs that have been provided with at least two authors or more considered as collaborative. In addition, to calculate ratio of co-authorship publications to single author publications the below formula was used:

$$\text{Co-authorship ratio} = \frac{\text{\#Co-Authored Publications}}{\text{\#Single-Authored Pubs} + \text{\#Co-Authored Pubs}}$$

Ratio greater than 0.5 = more co-authored than single authored publications

Ratio of less than 0.5 = more single- authored than co-authored publications (Sutter & Kocher, 2004).

According to the formula, the ratio of co-authorship in field of information theory during 1913-2011 was 0.70. As a result, it indicates that proportion of co-authorship is more than single author production. Based on the findings, as shown in Table 9, 70.40 percent of published papers in the research period were produced collaboratively and only 29.60 percent of papers were produced individually.

### ***Type of Collaboration***

To determine the type of collaboration between scholars in this field, the papers with at least two authors or more belonging to the same organization, university or research institution were considered as institutional collaboration. The papers with at least 2 authors or more in different organizations, universities or research institution and in a country were considered as inter-institutional collaboration and the paper with at least 2 authors or more that were produced with the organizations, universities or research institutions

in different countries were considered as international collaboration. The types of collaboration were grouped in eight periods, including 1913, 1938, 1950-59, 1960-69, 1970-79, 1980-89, 1990-99, and 2000-11.

Table 10 illustrates the type of collaboration in field of information theory. In 1913 and 1938 collaborated works were single author and during 1950-1959, only type of collaboration was institutional and constituted 0.15 percent and during 1960-1969, type of collaboration was institutional and inter-institutional. In period times 1970-2011 showed each three of type collaboration and institutional collaboration was dominant. Generally, the type of collaboration between scholars in the field information theory was 52.23 percent of collaborations institutional, 30.29 percent inter-institutional, and 17.48 percent of them international. Overall, institutional collaboration was dominant.

Table 10. Type of Collaboration between Iranian Scholars

Year(s)	Institutional	Inter-institutional	Inter national
1913	0.00%	0.00%	0.00%
1938	0.00%	0.00%	0.00%
1950-1959	0.15%	0.00%	0.00%
1960-1969	0.62%	0.03%	0.00%
1970-1979	1.44%	0.34%	0.03%
1980-1989	1.07%	1.16%	0.20%
1990-1999	9.73%	5.64%	2.73%
2000-2011	39.21	23.12%	14.51%
Total	52.23%	30.29%	17.48%

### ***Distribution of Subject Categories***

Distribution of subject categories via keyword analysis indicated a great diversity including 123 subject categories related to the research topic of information theory in *Web of Science*. Table 11 lists that top 10 subject categories in the 89 years. Among the top subject categories are computer science (29.93%), engineering (22.35%), and physics (18.40%) have been the most outputs and the article percentage had a significant growth.

Table 11. Top 10 Subject Categories

Subject Categories	1913	1938	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2011	Total
Computer science	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.21%	25.73%	29.93
Engineering	0.00%	0.00%	0.06%	0.07%	0.02%	0.12%	3.33%	18.75%	22.35%
Physics	0.00%	0.00%	0.00%	0.00%	0.04%	0.02%	2.40%	15.95%	18.40%
Mathematics	0.00%	0.00%	0.06%	0.07%	0.08%	0.18%	1.41%	7.17%	8.97%
Telecommunications	0.01%	0.01%	0.14%	0.12%	0.11%	0.11%	0.48%	6.14%	7.12%
Optics	0.00%	0.00%	0.02%	0.14%	0.04%	0.06%	0.97%	5.50%	6.73%
Chemistry	0.00%	0.00%	0.02%	0.06%	0.09%	0.27%	1.13%	2.65%	4.23%
Neurosciences neurology	0.00%	0.00%	0.00%	0.00%	0.08%	0.19%	0.64%	2.70%	3.61%
Environmental sciences ecology	0.00%	0.00%	0.00%	0.00%	0.08%	0.15%	0.38%	2.34%	2.95%
Biochemistry molecular biology	0.00%	0.00%	0.00%	0.00%	0.04%	0.05%	0.33%	2.36%	2.78%

Table 12. Top 10 Keywords

Keywords	1913	1938	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2011	Total
Information theory	0.01%	0.01%	1.21%	2.46%	3.65%	3.36%	6.85%	34.94%	52.7%
Entropy	0.00%	0.00%	0.00%	0.00%	0.06%	0.11%	2.51%	12.64%	15.3%
System (s)	0.00%	0.00%	0.04%	0.07%	0.37%	0.00%	2.30%	10.39%	13.2%
Model (s)	0.00%	0.00%	0.01%	0.03%	0.08%	0.17%	1.60%	8.47%	10.4%
Communication	0.00%	0.00%	0.09%	0.02%	0.10%	0.16%	0.48%	6.60%	7.5%
Quantum	0.00%	0.00%	0.00%	0.02%	0.01%	0.03%	0.59%	6.24%	6.9%
Dynamics	0.00%	0.00%	0.00%	0.03%	0.07%	0.08%	1.09%	4.42%	5.7%
Network(s)	0.00%	0.00%	0.00%	0.00%	0.00%	0.03%	0.54%	4.52%	5.1%
Capacity	0.00%	0.00%	0.02%	0.01%	0.01%	0.00%	0.40%	4.55%	5.0%
Statistical mechanics	0.00%	0.00%	0.02%	0.03%	0.00%	0.00%	0.25%	4.54%	4.8%

As author keyword analysis offers information about research trends in the view of researchers, it has proven to be important for monitoring the development of science (Li et al., 2009). In this study, 8,930 different author keywords were used from 1913 to 2011. Forty percent (3.572) appeared once, reflecting a wide difference in research focuses. Table 12 lists the top 10 -used keywords in the 89 years, with the most frequently used keywords being Information theory (52.7%), entropy (15.3%), system (s) (13.2%), and model(s) (10.4%).

### Discussion and Conclusions

This study of information theory outputs showed some significant points on the worldwide research trends and performance from 1913 to 2011. The publication outputs about information theory increased during 89 years, but there were fluctuations in trend of growth. The products in the field of information theory from 1913 to 2011 showed a growth rate of 7.5 percent. In total, there are 8,466 publications in eleven types of document and sixteen languages listed in 123 subject categories



related to the research topic of information theory indexed in the *Web of Science* database.

Findings showed that *IEEE Transactions on Information Theory* published the most documents of information theory, followed by *Physical Review A* and *Physica A: Statistical Mechanics and Its Applications*. Of the 91 countries represented in the research publications, the top three were USA, UK, and Peoples Republic China.

Results by institution indicate that MIT University published more documents than other universities and institutions followed by University of Illinois, National University La Plata. Plastino, Hayashi, Matsuda, Nalewajski, and Casas were the most productive authors in the field of information theory who authored the largest number of papers. The average 13.74 pages and 28.68 references per article indicate average publication characteristics during the time frame of this study, 1913- 2011. The articles with greatest impact (most highly cited papers in the field of information theory) were authored by Turk and Pentland (1991), Jaynes (1957), and Maes et al (1997).

During recent decades, the phenomenon of co-authorship has drawn a considerable amount of attention among sociologists of science. Researchers use formal and informal scholarly communication. The formal communication are papers published in scholarly journals that have been reviewed by peers. The informal scholarly communication can be meetings, calls between researchers, and pre and post prints (Lacy & Busch, 1983). So, scientific collaboration, in which two or more authors collaborate to create one scientific work, and in recent years, factors such as specialization and the growth of interdisciplinary research have prompted researchers to cooperate with each other. Findings of this study indicate that 29.60 percent of the authorship was by one author, 30.38 percent was two authors, and 40.02 percent was three or more authors. Therefore, the authorship pattern of one author has held steadily while the published papers by two and three or more authors has been rising as 70.40 percent of published papers in the research period were produced collaboratively and only 29.60

percent of papers were produced individually and institutional collaboration was dominant.

Research publications in the field of information theory were indexed by the keywords information theory, entropy, system, and model(s) and among the top subject categories were computer science, engineering, and physics. Hopefully, this paper provides some insight into the current state of information theory research such as the characteristics of research activities, writing patterns, publication patterns, as well as countries, institutions, journals, and authors with greatest impact. The results of this research can provide unique and detectable indicators that can serve as benchmarks for future research.

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